



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

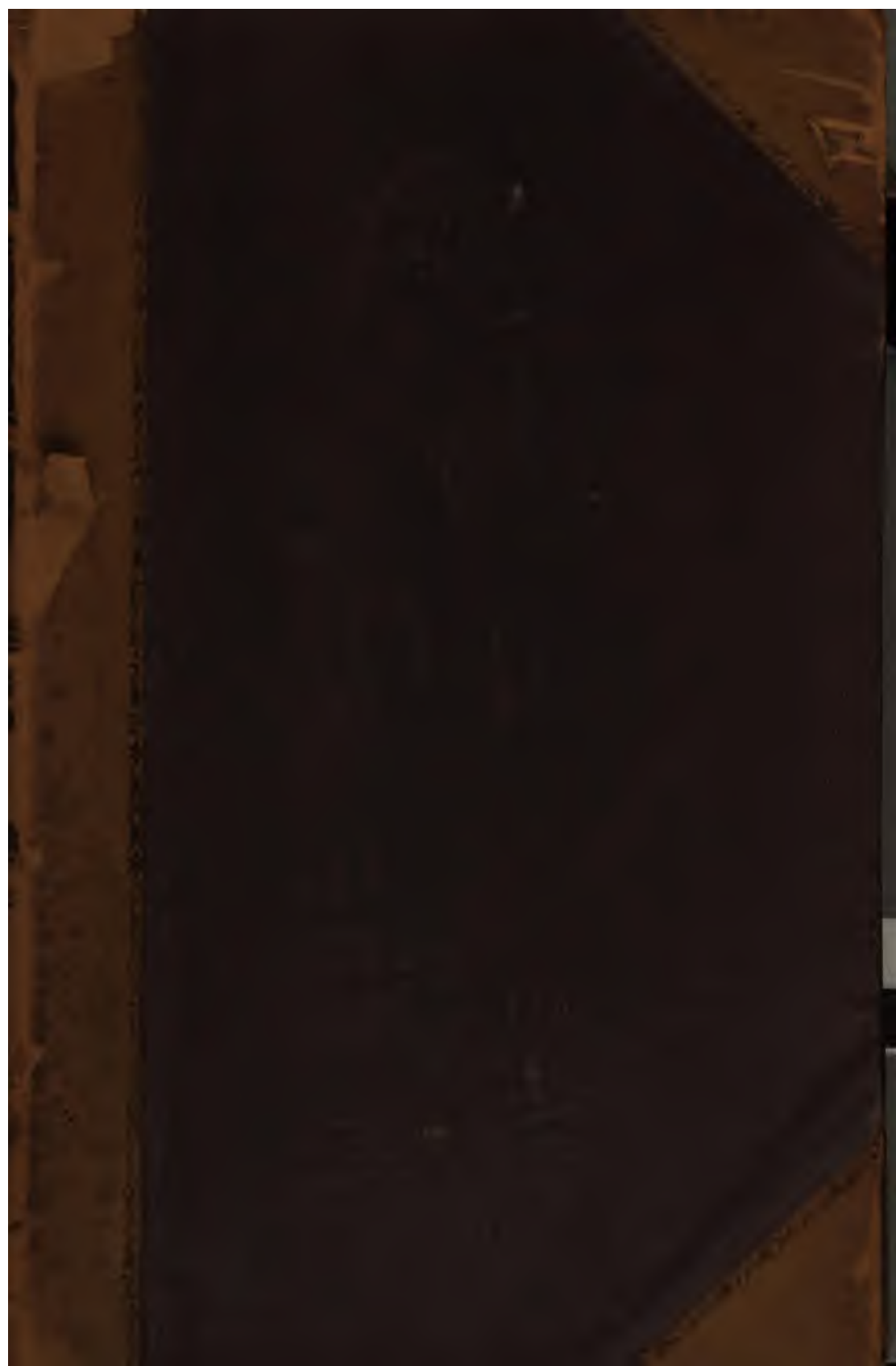
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>







100

THE
ORIGIN AND NATURE OF DISEASE.

THE
ORIGIN
AND
NATURE OF DISEASE:
AND
THE PHYSIOLOGICAL ACTION
OF
AUXILIARY REMEDIES;
IN CONNECTION WITH HOMŒOPATHIC TREATMENT.

BY

G. CALVERT HOLLAND, M.D. EDIN.;

HONORARY PHYSICIAN TO THE SHEFFIELD GENERAL INFIRMARY; FORMERLY PRESIDENT OF
THE HUNTERIAN AND ROYAL PHYSICAL SOCIETIES, EDINBURGH; AND
BACHELOR OF LETTERS OF THE UNIVERSITY OF PARIS.



"Non fingendum aut excogitandum, sed inventiendum, quid natura aut faciat aut ferat."

EDINBURGH:
THOMAS C. JACK, 92, PRINCES STREET.
LONDON: HAMILTON, ADAMS, AND CO., PATERNOSTER ROW;
HENRY TURNER AND CO., FLEET STREET.

MDCCCLX.

157. m. 90.

ANDREW JACK, PRINTER, OLYDE STREET, EDINBURGH.

P R E F A C E.

THIS work, which originally appeared in Monthly Parts, is now published as a volume; and though written as introductory to the treatment of diseases on homœopathic principles, it is nevertheless complete in itself. The views which it develops have little in common either in theory or practice with received medical doctrines. This is not, however, urged as a peculiar claim to attention. On the ground of mere novelty it would be absurd. The claim to be just and worthy of notice must rest on what is true, or what is in some degree of practical value.

There is no profession that offers anything like the same fine and varied field for personal observation, inseparably blended with the interests of mankind, as that of medicine. It is, and ever will be, exhaustless, as the objects of which it treats; at best, are only partially seized, are never seen in broad day. To the studious and enlightened practitioner they are pregnant with attractions which grow according to the earnestness with which they are investigated.

They display daily to his mind some new phase, some phenomenon that sets in motion new trains of thought, extending, confirming, or correcting the views he entertains. He is, in fact, always learning, and never learned, if what he knows be compared with that which is unknown or very imperfectly understood.

He who confines himself to a beaten track or rut, the result of indifference or of loose and limited observation, is a machine, and one of a dangerous character. The roads which lead to the cure of disease are not one, but many, variable in their directness, and have to be constantly changed to meet the requirements of disordered vital action.

A professional career of nearly forty years, not idly or unprofitably spent, but actively devoted to the acquisition of knowledge, and under circumstances favourable to its attainment, must have some story which experience can be at no loss to tell, in connection with the subjects which have occupied the mind—a story not culled from books, elaborately drawn, and imposing from its apparent completeness; but a plain practical tale concerning the animal system, the physiological principles by which it is maintained in health, and the mode in which these are disturbed by disease. Such is the story which it has been my aim and anxious desire to unfold throughout this treatise.

It cannot be doubted, that within the last half-century much light has been thrown on the constitution of the human body, and on the nature of disease, more especially as it may be traced in structural changes. It will, however, be admitted by those competent to express an opinion, that the Art of Healing has made comparatively little progress. Many severe maladies were as judiciously treated

by Hippocrates, and by the modern Hippocrates, Sydenham, as by the accomplished physician of the present day; nor is this difficult to account for. When less was known of the animal system there was a closer observation of the phenomena of disease, and of the effects of remedies: the attention was not withdrawn from the study of the important objects on which it was fixed, by finely-spun notions concerning the condition of this or that tissue; nor was it distracted in the application of means, by calculations equally refined concerning the virtues of medicinal agents in relation to a particular tissue. The disease was contemplated more in its entirety; or, in other words, the cardinal features of it, *which presented it in outline as a whole*, were more firmly grasped; and hence led to the employment of measures often simple, but admirably fitted to influence beneficially the vital powers generally, and, as a consequence, the local affection.

It is not intended by these remarks to call in question the value of pathological researches. They have a value, and one of no mean weight, if the knowledge which they furnish be wisely used; if made instrumental to the acquisition of other knowledge—that of the functions of life in their normal state, giving to the mind a clear conception of the conditions on which health depends; *and contributing to the attainment of ideas equally just and large concerning the nature of the deviations which constitute disease*; not the disease of a single organ, though this may appear to be alone affected, but a thorough insight into the nature of the co-existing derangement of the nervous and circulatory systems.

The best practical physician is very seldom he that is

most learned in the different branches of science more or less associated with the exercise of his profession. A fulness or overflowing of knowledge, is not a fulness in all directions: it is not unfrequently characterised by a deficiency in directions which should have a somewhat absorbing influence,—should lead to the concentration of the mind on matters which are essential to a knowledge of disease, in a comprehensive sense, and of the sound principles of treatment. This knowledge to be practical, to be pertinent and direct in its application, must be based on the study of the animal system in its physiological and pathological conditions. To understand these, as they should be understood to suggest means to important ends, demands a life of toil, and of observation that never sleeps, that is always prying to see further into nature.

The mind, whatever be its powers, has its definite capacity. If it possesses such an amount of one kind of knowledge as to give pre-eminence,—that renders the individual conspicuous among the very few,—there will not be pre-eminence in another direction, except that which confers it has so much in common with the other, as to be twin branches of the same trunk. The development of modern science allows of no Crichton.

An able and suggestive writer, and who is exceedingly hopeful of the future progress of medicine, remarks: “Let us by all means avail ourselves of the unmatched advantages of modern science, and of the discoveries which every day is multiplying with a rapidity which confounds; let us convey into, and carry in our heads as much as we safely can, of new knowledge from chemistry, statistics, the microscope, stethoscope, and all new helps and methods; *but let*

us go on with the old serious diligence,—the experientia as well as the experimenta."*

The old serious diligence which the writer recommends, and on which he justly lays great stress, if carried out in the manner it should be, implying a profound knowledge of the vital powers,—of the laws by which they are governed,—conferring at the same time a rare practical ability and tact, will not leave much leisure for the cultivation of other pursuits ; or if excellence be attained in these, let it not be imagined that it is not at the expense of some other species of knowledge.

As all diseases, in the application of remedies, have to be influenced through the Nervous and Circulatory systems, but chiefly through the former, it follows that these should be objects of special study. To know the former, as it was known and taught by Bell, Magendie, Muller, and Marshall Hall ; and the latter, as it is described in systems of physiology, is to know comparatively little of either of them as they are involved in diseases of any aggravation. But how few are familiar with the important truths established by these distinguished writers. It may further be remarked, that their discoveries have as yet exercised little influence in the improvement and correction of prevailing modes of treatment. It is yet very largely knowledge unapplied ; and to make this fruitful, to bring out its practical value,—and it is indeed rich in this—the animal system must be studied with greater attention ;—‘*the old serious diligence*’ must be given to it, guided and informed by the additional light which science has thrown upon the path of

* *Horæ Subsecivæ.* By JOHN BROWN, M.D.

inquiry. There is a new and extensive field for observation—new from the multiplicity of fresh objects presented to the mind, and each may be said to be waiting to be justly interpreted.

The principles which are developed in this work, is an attempt to explain the origin, nature, and progress of disease by the light of physiology. How far this has been successful it is for others to judge. It will not be denied, that various morbid conditions of the body are displayed in new points of view,—in relations not previously contemplated.

These principles rest on their own independent foundation : they have no necessary connection with homœopathy, or with the generally received ideas on medical practice, though they unquestionably prove that the small doses advocated by the former, so far from being an absurdity, may be shown to be consistent with sound views concerning the origin and nature of disease as elucidated by physiology. The first deviation from health, in whatever organ it occurs, takes its rise *in the disturbance of nervous matter* : and the subsequent forms which it assumes are to be traced to the further changes induced in the nervous tissue. It will not be questioned that this is marvellously susceptible of influences of every kind,—and some of these, acknowledged to possess a curative tendency, are not of greater potency than the medicinal substances of the homœopath. Yet those who admit the power of the one deny that of the other.*

* “A single *grain* of musk has been known to perfume a large room for the space of twenty years ; at the lowest computation, the musk, in such a case, must have been subdivided into 320 *quadrillions* of particles,

Throughout this work my labours tend to prove the *nervous origin and character of disease*; and hence furnish a basis for the doctrine of small doses. Experience, however, independent of physiological principles and reasoning, establishes the power of these as curative agents; and objections urged against them are unworthy of notice unless they disprove the facts which daily experience affords.

Among the considerations which have had some weight in the writing of this treatise, has been a desire to correct the prevailing and growing disposition to regard homœopathy as a simple affair of globules, so easy to prescribe that a knowledge of disease is quite superfluous. This is a grave mistake. Hahnemann, though he has pointed out new roads to a cure, has in no degree diminished the necessity of a thorough acquaintance with the animal system in its healthy and morbid conditions. The *symptoms* which determine the selection of a remedy are not the same to any two minds: they are variable in number and significance according to the perceptive faculties of the observer, and the depth and accuracy of his insight into the functions of life. Hence to understand them, so as to make them a sure guide in the

each of which was capable of affecting the olfactory organs."—*The Elements of Medical Chemistry*. By JOHN AYRTON PARIS, M.D., F.R.S. If a particle so minute can sensibly affect the nerves of the nasal cavities, on what grounds can it philosophically be denied, that the particles of other substances taken internally influence nervous matter, and, as a consequence, disease,—substances used by the homœopath and possessing active properties? Certain springs have been found to be efficacious in particular disorders, as indigestion and glandular affections, yet that on which their virtues depended was as insignificant in quantity as the homœopathic dose, and in many cases much less. Is it consistent to accept the one class of facts, and to treat with contempt the other, when both are established by the same precise evidence?

application of means, he must be familiar with the living structures out of which they spring,—with the laws by which these structures are governed. The mere *globulist*, and he is not a *rara avis*, is a man of small mental vision; he sees but a short distance, and that very obscurely. He is neither a credit nor an honour to the profession. The exercise of this to be at once honourable, dignified, and a Power to do good, demands attainments very different from what he possesses.

ANALYTICAL TABLE OF CONTENTS.

INTRODUCTORY REMARKS.

Difficulty of adapting a medical work to the wants of the public.

The defect of existing treatises. The practice of homœopathy not easy, as is generally imagined. The importance of adjuncts or auxiliaries to medical treatment. The necessity of large and liberal views in the treatment of disease. Remarks on diet. The unfounded objections of homœopaths to the use of tea. The physiological explanation of the fallacy of the views on which these objections are founded. The cause of the occasional injurious effects of tea.

The character of Hahnemann, and the independent spirit of inquiry which distinguished him. Various substances alleged, but unjustly, as detrimental to health. My conversion to homœopathy. The nature of the physiological inquiries which led to it. The groundless objections urged against the small dose. The advantages of homœopathy as compared with the old system in the treatment of disease. The results of my homœopathic practice. The proper medical treatment of children imperfectly understood. The character of the constitution in infancy, and the causes of its extraordinary susceptibility to external and internal influences. The opinion of Dr James Johnson in reference to the allopathic treatment of disease. The deaths which have occurred in my practice, and the nature of the diseases. The potencies which I ordinarily use. P. 3—31.

ADJUNCTS TO MEDICAL TREATMENT.

SECTION I.

Employment of Friction to the Abdomen.

Our imperfect knowledge of the human body in health and disease.

The important changes in the practice of the allopath within the

last thirty years. The three points of view in which diseases of any severity should be studied. The importance of remedial measures not included under the term drugs. The antiquity of friction as a remedial agent. The Greeks and Romans, who extensively used it, were not acquainted with the physiological principles on which its efficacy depends.

The nature of the physiological researches which suggested to my mind the value of friction as an adjunct to medical treatment. The amount of blood distributed to the abdominal viscera, and the way in which friction influences its circulation and properties. The nervous system primarily acted upon by friction to the abdomen. All organs may be excited, through the agency of nervous matter, in two modes. The physiological explanation of the fact. The beneficial change induced in the condition of the nerves is communicated to the capillaries, and the effects produced in these invigorates the circulation, and improves the properties of the entire mass of blood in the body. The circulation of the blood is maintained by three organic powers. How the distribution of the blood is modified in diseases of excitement and depression. Why the lungs are much less subject to congestion, in the frequent disordered states of the circulatory system, than the abdominal viscera. The manner in which the distribution of blood is influenced in diseases of depression or weakness of the powers of life. Remarks on the secretory organs. The causes which render the liver peculiarly liable to congestion. The practical inferences to be drawn from this liability, and the frequent congestion of the organ. P. 33—51.

SECTION II.

The application of Friction in Typhus and Typhoid Fevers.

Depression of the vital functions the prominent symptom in these diseases. The effects of this depression on the distribution and properties of the blood. The principle on which homœopathic agents act as curative remedies. Under what circumstances friction is efficacious, and the manner in which it should be used. The effects of friction on the action of the bowels, and on the condition of the motions. The erroneous opinions entertained concerning the necessity of causing the bowels frequently to act in these and other diseases. P. 51—55.

SECTION III.

The application of Friction in Dyspepsia.

The variety of morbid phenomena characterising indigestion. The ordinary symptoms of the disease. The pathological condition of the animal system. The practical inferences to be deduced from it. The considerations which should guide and regulate medical treatment. The grounds on which friction is advantageous. P. 55—58.

SECTION IV.

The application of Friction in Phthisis or Consumption.

Consumption rarely curable except in the incipient stage. The first or early indications of the disease. The character of the first structural changes observed in the lungs. Physiological views accounting for the deposition of miliary tubercles. Phthisis not a local affection, but a disease of the entire animal system. The functions of the lungs. The influence exercised upon the lungs by changes in the condition of the nervous centres. Experiments illustrating and establishing the influence of these centres. The effects produced upon the nervous centres by acting on the peripheral extremities of the nerves in the lungs. The experiments in question elucidate the origin of consumption, and suggest sound principles of treatment. The nature of the constitutional liability to this disease. This originates in the weakness of the nervous system, and not, as is imagined, in any peculiar delicacy of the lungs.

Description of the consumptive constitution. The pathological principles laid down have in no degree been entertained by previous writers. The observations of Dr Copland. Tubercles occur as a natural result of diminished nervous power. The causes which explain the passing of miliary tubercles into further stages of pulmonary disorganization. Dr Copland's observation concerning the presence of tubercles in several organs at the same time. The imperfection of the doctrine which he lays down. The views on which the presence of them in these several organs is explicable. The cause of the development of tubercles in the lungs previous to

their appearance in other organs. The views of Andral on the origin of tubercles. The fallacy of these views.

The practical conclusions to be drawn from the pathological principles advanced in this work. The different opinions entertained concerning the nature of phthisis. The causes which modify the manifestation of the symptoms of this disease. Explanation of the susceptibility of the intestines to tubercles and ulceration. The physiological grounds on which the medical treatment of consumption should be based. The value of friction as a remedial agent, and the way in which it should be employed. P. 58—84.

SECTION V.

The application of Friction in Scrofulous affections.

The supposed identity of scrofula and phthisis. Reply to the objections that may be urged against the introduction of physiological and pathological researches into a work of this kind. The distinctive characters of scrofula and consumption. The influence of favourable circumstances on the adult scrofulous constitution. The indications of the scrofulous constitution. Dr Copland contends for the *identity* of scrofula and phthisis. Objections to, and the fallacy of, his views.

The condition of the nervous system in the two diseases. The temperament of the consumptive and scrofulous constitution. The erroneous views of Dr Copland on the states of the blood and secretions in the two diseases. The defect of the scrofulous constitution is a want of nervous energy. The cause of the enlargement of the glands of the neck, and of the disease of the larger joints in the scrofulous constitution. The views of Mr Phillips on the enlargement of the glands. Three causes conjointly occasion the enlargement of the glands. Particular local circumstances causing the enlargement of the glands of the neck.

In what way scrofula may be cured or relieved. The advantage of Friction in the treatment of the disease. Scrofula showing itself in the female at puberty. The changes which the scrofulous constitution undergoes on the attainment of manhood. The amount of stimulants which this constitution can ordinarily bear with comparative impunity. The influence of habit on the constitution. P. 85—105.

SECTION VI.

The application of Friction in cases of Constipation.

The importance of the subject. The erroneous views of Dr Copland on the necessity of regular alvine evacuations. Constipation is frequently the accompaniment of the most vigorous development of the animal frame. The absurd notions of mankind on the functions of the bowels. The wisdom of letting nature have much of her own way. One of the valuable secrets of health is to have implicit confidence in nature. Description of the structures and functions of the alimentary canal.

The injurious practice of drugging the bowels. The perfect quiescence of the bowels necessary to recovery in many forms of disease. The cause of constipation in the wiry and muscular frame. The rule to be regarded with respect to the action of the bowels. The supposed evils arising from constipation. The cause of the irregularity of the action of the bowels in children, and the injudiciousness of constantly teasing them with purgatives. Constipation in delicate females of sedentary habits. Method to be followed by those in health who suffer from constipation. Remarks on the proper treatment of children whose bowels are inactive. The advantages of friction in those who are delicate and habitually suffer from constipation. P. 105—121.

SECTION VII.

The consideration of Constipation in connection with Acute Inflammation of the Lungs.

The fallacy of the prevailing opinion concerning the necessity of acting on the bowels by means of purgatives, in acute diseases. Constipation a constant symptom in all acute inflammatory affections of important organs. The constipation is to be ascribed to three causes. The *diminished* amount of nervous power transmitted to the bowels at this time. The *diminished* secretions of the abdominal viscera, and the greatly *altered* qualities of the blood. The injurious effects of forcing the bowels to act under these circumstances. The injudiciousness of the medical treatment generally pursued in inflammation of the lungs. The remark of Goëthe on the susceptibility of nervous matter. P. 121—125.

SECTION VIII.

The consideration of Constipation as occurring in Acute Rheumatism.

Constipation extremely obstinate in severe cases of acute rheumatism.

The pathology of the disease not understood. The views entertained by writers on this subject. Acute rheumatism primarily a NERVOUS affection. The different constitutional conditions in which it occurs. The symptoms of the disease. The manner in which the nervous system is affected giving rise to fever and inflammation of the joints. The strong current of life—the nervous power—is *outside* and not within the body. The cause of the fever, and of the copious perspiration which succeeds it, has not been explained by writers. The physiological explanation of it.

Acute rheumatism consequent on induced *debility*. The difference in the symptoms in such a state of the animal system, and when this, previous to the attack, is robust and healthy. The modification of treatment which these constitutional differences suggest. An interesting case of acute rheumatism arising from bodily weakness and exhaustion. The lesson which it teaches in respect of medical treatment. The injurious effects arising from the use of purgatives under such circumstances. The proneness of acute rheumatism suddenly to change from one joint to another. Remarks concerning the *principle* which changes its locality. The important inference to be drawn from the fact. A singular case of metastasis of disease, or disease moving from one organ to another. Views explanatory of the origin of *cancerous* and *schirrhous* diseases. The cause of the liability of the female breast to affections of this kind.

The cause of the distressing pain experienced in the joints in acute rheumatism. The acute pain in Gout explicable on the same pathological principles. *Tic douloureux* a further illustration of the same principles. The change which this disease produces, when seated in the nerves of one side of the head, in the strength and growth of the hair, and an explanation of the phenomena. The views advanced explain the remarkable discrepancies in diseases to which are applied the common term of ACUTE INFLAMMATION. The inquiry proves that *acute* rheumatism consists in the disordered balance of the nervous system. The valuable remedial effects arising from the application of heat and friction to the *abdomen*. P. 125—142.

SECTION IX.

The consideration of Constipation in connection with Typhus and Typhoid Fevers.

The state of the animal system in Typhus and Typhoid fevers. The prominent symptom depression of the nervous and circulatory functions. The condition of the abdominal viscera. What indications can there be for the employment of aperients or purgatives? The objections to the use of purgatives, and the evils to which they give rise. One great consideration in the treatment of these diseases should be to economize the strength of the patient, to husband the vital energies. The necessity for this line of conduct from the nature of the existing disorders. The advantage of allowing the bowels to remain at rest, or exempt from the action of purgatives. The beneficial effects of friction in all such cases. P. 142—147.

SECTION X.

The application of Friction in Diarrhœa.

The different kinds of Diarrhœa. These subdivisions comparatively of little practical importance. The very imperfect views of writers on the nature of this disease, and of the co-existing state of the animal system. Why learned works on medicine have a brief existence. Friction an invaluable remedy in cases of Diarrhœa, especially when this is characterised by weakness or exhaustion of the animal system. P. 148—150.

SECTION XI.

The consideration of Diarrhœa occurring in Infants and Children.

The frequent occurrence of Diarrhœa in children. The causes which account for it. The vital endowments of the young. The condition of the nervous system at an early period of life. The character of the digestive organs. Errors in the diet of children and the mischief it produces. An interesting case of an infant which had been injudiciously treated. The grounds on which strong or stimulating ingesta are objectionable and injurious. Common sense displayed in the treatment of children as rare a mental quality as genius.

The rapid progress of disease in the child. The diseases of infancy, if of any continuance, always diseases of *depression*. No indisposition is trifling in infants. The nature of the symptoms produced by exposure to atmospheric influences of a depressing character. The general measures of treatment suggested by this state of the animal system. Friction and fomentations to the bowels the most valuable of these general measures. The Diarrhoea of infants arising from improper food. The great mortality among children attributable to injudicious medical treatment. The dietetic treatment to be attended to. Diarrhoea and other symptoms occurring in infants from causes difficult to define. The defects of allopathic treatment in such cases.

The efficacy of homœopathic remedies and of friction. The Diarrhoea frequently occurring in the teething of children. If the purging is slight it should not be interfered with. The constitutional disorders occasionally produced by teething, and the treatment proper to be pursued. The usual practice of the allopath, and its baneful effects. Physiological considerations showing the efficacy of friction and fomentations in cases of this kind. Diarrhoea occurring in infants at the period of weaning. The treatment proper to be adopted. P. 151—169.

SECTION XII.

The application of Friction in Dysentery and Dysenteric affections.

The seasons in which Dysentery frequently occurs. The effects of heat on the animal system. The predisposition it creates to certain classes of diseases. The type of the disease determined by the then state of the constitution. The state of the body at the decline of summer and at the commencement of autumn. The symptoms of Dysentery are variable. It occurs in the *acute* and *asthenic* form. The symptoms characterising each. The disease principally seated in the large intestines, but in particular in the colon. Writers embarrassed to account for this. The colon possessed of peculiar anatomical conditions which have not been taken into consideration.

The difference between the *large* and *small* intestines in respect of their vital endowments. Why the disease is Dysentery, and not cholera, diarrhoea, or colic? The explanation. Medical authorities at variance as to the nature and treatment of Dysentery. The

state of the liver and its secretion in the early stage of the disease. The cause of the frequent distention of the gall-bladder. A general view of the condition of the animal system suffering from dysentery. The effect of atmospheric heat on the functions of the liver. The congestion of the abdominal viscera, and of the *large abdominal veins*. How this state of the veins affects the already disordered abdominal viscera. The treatment which the pathological principles developed suggest. The views of the illustrious Sydenham, regarding the fever in dysentery, as *turned in upon the intestines*. The incorrectness of these views. The transformation of dysentery into fever. Acute dysentery liable to assume a chronic form. The treatment which should be pursued in the acute stage of the disease. The mode in which the remedies which should be employed act. The measures adopted by the allopath, and the objections to them. The efficacy of the means recommended in the milder forms of dysentery, and when this becomes chronic. P. 169—189.

SECTION XIII.

The application of Friction in cases of Jaundice.

Reasons for entering upon the investigation of this disease. The extraordinary diversity of opinion among writers concerning the nature and treatment of jaundice. This disease originates in very different causes. These causes, with the exception of *physical* obstacles to the passage of bile, have not been understood by those who have studied the subject. Jaundice divided by writers into five species. The nature and symptoms of each of these species. Case illustrative of the acute pain occasioned by the passage of gall-stones.

The views of writers in regard to the *regurgitation* of bile into the liver causing jaundice. The opinions generally entertained concerning the existence of *spasm of the gall-ducts*. The evidence adduced insufficient to establish the fact. Violent mental emotions producing jaundice, supposed to occasion this from giving rise to *spasm* of the gall-ducts. The manner in which extreme mental emotions influence the liver, and the body generally, has not been understood. Explanation of the phenomena. How congestion of the liver induces jaundice. The views of Dr Copland on this subject. Depressing passions disorder the functions of

the liver. The remarks of Andral on mental emotion. He ascribes to depressing passions an influence which is alone exercised by the exciting or exhilarating.

Jaundice frequently arises from disorder of the digestive organs. Two cases of jaundice, and the treatment adopted in the cure of them. Jaundice occasionally the result of an attack of hysteria, epilepsy, and hysteralgia, from producing, as it has been erroneously supposed, *spasm* of the gall-ducts. Jaundice at times *endemic* from the unhealthiness of particular districts. It is sometimes observed in *ague*. Other conditions of the animal economy in which it occurs, as in the sudden cessation and continued interruption of menstruation, and when the womb, at the decline of life, is ceasing to exercise its functions. How the liver, under these different circumstances, giving rise to jaundice, is affected. The attempt of Mason Good, but unsuccessfully, to explain the phenomenon.

In what way injuries of the brain occasionally produce jaundice. The disease sometimes consequent on the sudden suppression of piles. The *slighter forms* of jaundice, and the causes in which they originate. The jaundice of new-born infants very differently accounted for by writers. The state of the liver peculiar to foetal life has been overlooked in the search after efficient causes. The peculiarities of foetal circulation, and the state of the liver. The physiological explanation of the non-secretion of bile in the foetus. Considerations in respect of the treatment of jaundice. Two cases given as an illustration. The advantages of fomentations and friction. The chronic form of the disease, and the means of cure. Measures tending to prevent the formation of gall-stones. P. 189—228.

SECTION XIV.

The application of Friction in cases of Diphtheria, Croup, Acute and Chronic Bronchitis, and Ulcerated or Malignant Sore Throat.

The formidable character of these diseases. The discrepancies in the views of writers concerning the nature and treatment of them. Considerations which show the importance of adjuncts. No severe disease ever retains long its *local* character. The effects to which it gives rise suggestive of pertinent practical truths. The relations existing between organs, the seat of these local diseases,

and the abdominal viscera. The physiological relations between the pharynx, larynx, and trachea, and the abdominal viscera, studied under three heads, in reference to the effects to which friction and fomentations give rise.

The sympathies which exist between the *mucous membrane* of the respiratory and digestive organs. In diphtheria, and the other affections, the circulatory system is seriously disordered, the blood deranged both in its distribution and properties. Hence the importance of friction to the abdomen. The nervous relations existing between the structures, the seat of these diseases, and the great NERVOUS CENTRES. The nervous agent material, a substance which may be accumulated and dispersed. The Hypnotism of Mr Braid. Experiments on the functions of the spinal cord. The light which Mesmerism throws upon nervous phenomena. The effects of friction on the spinal cord and medulla oblongata.

Diphtheria not a new disease. Its ravages at different periods. The early symptoms of the disease. The symptoms in its advanced stage. The three varieties of the affection. The duration of the disease variable. Of the exciting causes of it nothing is known; nor of its nature beyond the structural changes to which it gives rise. The predisposing causes. Some writers imagine that a *poison* is communicated to the blood. The object of treatment should be to excite and re-establish the natural functions of the nervous system. No settled views concerning the treatment which should be adopted. The presence of the *false membrane* the distinctive feature of the disease.

Description of the progress of diphtheria. The mode of proceeding in the treatment of it. Friction and fomentations to the abdomen valuable remedial agents. An explanation of their influence. The homœopathic remedies which are useful. The large and liberal views entertained by Hahnemann in regard to auxiliaries to medical treatment. The just and enlightened remarks of Dr Dudgeon.

The consideration of Croup.—Croup and diphtheria imagined by many high authorities to be identical diseases. When both are well-marked they have distinctive differences. The views of MM. Broussais and Bretonneau. The character of Broussais. His great merit and defects. His doctrine of *gastro-enteritis* was bordering on the discovery of a valuable pathological principle. The precursory symptoms of croup. The seat of the acute inflammation which is present. Remarks on the membranous exudation.

Opinions concerning the causes of the suddenness of death from suffocation in this disease. The state of the lungs and the vessels of the brain observed after death.

The physiological principles explanatory of the production of the *false membrane* in croup: according to Lænnec, it is due less to the *degree*, than to the nature of the inflammation. The opinions of Gendrin, Andral, Copland, Mason Good, and others. The inflammation regarded as not *acute*, but *sub-acute* or *peculiar*. The formation of the false membrane accounted for on the physiological principles laid down. The animal system of the infant compared to a bud. The condition of the vital powers in the infant. Nature at this period of life is working from *within, outwards*. The diseases of childhood establish the correctness of the views developed.

The physiological changes produced in the animal system by the eruptive diseases of childhood. Is the discovery of Jenner an unmixed good or blessing? The question opens out a wide field for thought and investigation, and for the application of the experience and observation of the enlightened physician. It is urged that cases of consumption, scrofula, and other affections, have been greatly increased since the introduction of vaccination.

The observation of Sir Gilbert Blane on the probable occurrence of new diseases. Why variolous contagion received by a *puncture* is much milder than when received from the atmosphere. The explanation. The prevention, or cure of an eruption, often a serious injury to health. Persons who have had small-pox scarcely ever liable to consumption. A case exemplifying the salutary effects of an eruption. A deeply interesting case of a *syphilitic taint* communicated to the foetus, and exhibited in a striking form in the child at five years of age.

The return to the consideration of croup. The difference between the vital conditions of the *mucous membrane* in the young and the adult. Hence the membranous exudation in the one, and its absence in the other, when the air-passages in both are the seat of acute inflammation. The absurdity of regarding any inflammation as *peculiar*. It is simply inflammation modified in its character by the existing vital properties of the organ attacked. A further physiological exposition of the causes which give rise to the membranous exudation in the young. The grounds on which active depletory and other measures are injurious in the treatment of croup. The advantages of friction as a remedial agent.

Acute and chronic bronchitis.—The symptoms of acute bronchitis

in its early and advanced stage. The symptoms on the decline of the inflammation. The anatomical condition of the mucous membrane of the air-passages observed after death. The remarks of Lænnec on the extent and intensity of the inflammation. The causes of the differences in the diseases compared not understood. Easy of explanation. The circumstances modifying the redness of the mucous membrane the seat of inflammation. The disturbance of the urinary organs in all acute inflammatory affections, and in all fevers of an inflammatory character. The cause of this disturbance hitherto unexplained.

Pathological researches have done little towards the improvement of the healing art. They are of little value unless vivified by physiology. A knowledge of what is *natural* is necessary to understand that which is a departure from it—viz., disease. The three stages of acute bronchitis. The efficacy of friction and applications to the throat. The practical benefits arising from them. Their use in the chronic form of the disease. According to Andral and others, “the inflammatory softening of the bronchial mucous membrane is much more rare than that of the gastro-intestinal mucous membrane.” The difference in the vital endowments of the membrane in the two situations, and other circumstances by which it is influenced. The symptoms of chronic bronchitis. At times difficult to distinguish this from pulmonary consumption. The structural changes consequent on chronic bronchitis.

An interesting case of chronic bronchitis, which had been regarded as a case of pulmonary consumption. The dietetic and medical treatment of the disease. Just views of Broussais in regard to the object which should regulate the employment of remedies. The state of the abdominal viscera in all chronic affections. The homœopathic treatment. The value of friction to the abdomen established by considerable experience.

Ulcerated or malignant sore throat.—The different circumstances in which it occurs. The symptoms of malignant scarlet fever. This has been divided into the *inflammatory*, the *congestive*, and *mixed* varieties. With few exceptions it is of *mixed* character. The rapid progress of the disease, and frequent fatal termination. Great discrepancy with respect to the principles of treatment. The nature of the affection, depression of the nervous system, and the altered properties of the blood. The indications of treatment obvious. The measures which should be promptly employed. The error in supposing that blood-letting is the only remedy

which acts *directly* on the circulation. The state of the animal system when patients have overcome the extremely urgent symptoms of the disease, and the treatment which should be perseveringly used. The authority of a French physician in favour of the efficacy of friction. P. 228—330.

SECTION XV.

Remarks on the frequent use of Plaisters, and other substances which arrest or impede the Cutaneous Transpiration in Pulmonary and Rheumatic affections.

The prevailing opinion concerning the safety and advantage of such applications. The circumstance which directed my attention to this subject. The case of a gentleman who suffered from a chest affection. Disease aggravated and produced by the wearing of substances of this kind. All organs, whether internal or external, have waste or superfluous elements to throw off, the expulsion of them essential to their health and well-being. The cutaneous surface the external lungs of the body.

The nature and amount of the cutaneous excretion. The number of pores, and the number of inches of perspiratory tube, on the surface of the human body. The skin supposed to absorb oxygen, as well as to transpire. The action of various agents on the animal and vegetable kingdom. The serious evils arising from the suppression or partial suppression of the cutaneous transpiration. Transpiration varies in degree in *different localities of the body*—hence the importance of certain external regions. The loins frequently attacked by disease regarded as rheumatic. The use of plaisters to relieve it. The mischief which these are liable to produce. The obscurity involving the origin of diseases

A singular case of an affection of the loins. The issuing from the skin of numerous minute living creatures. Frequent ablution of the body essential to perfect health. The wearing of plaisters and other substances causes the *absorption of its muscular and adipose tissues*. In what way the chest may be strengthened, and rendered less susceptible to the influence of external atmospheric agencies. The best protection to the chest are the healthy and vigorous actions created in it. The treatment of affections of the loins, as rheumatism, sciatica, and disorders of the sexual organs of the female. P. 330—348.

SECTION XVI.

The application of Friction in cases of Hæmorrhoids or Piles.

The causes of piles extremely various. The received opinion concerning the nature of piles. The connection of piles with the state of the animal system generally. The importance of studying the condition of the latter. In every form and stage of hæmorrhoids the object of medical treatment should be to re-establish the natural balance of the circulation.

The structural and functional endowments of the rectum. The state of the animal system co-existing with piles. A case of cerebral disease consequent on the suppression of an accustomed discharge. Hæmorrhoids in constitutions not phlethoric. The homœopathic treatment of the disease. The advantages of friction. Discharge of blood from the bowels not connected with the presence of piles. Two cases given as examples. The use of friction in *hæmatemesis* or vomiting of blood. P. 348—363.

SECTION XVII.

The employment of Friction and other means in Diseases of the Spinal Column and Cord, causing Distortion or Curvature, and in certain affections of the Larger Joints.

Spinal affections imperfectly understood. The occurrence of them in infancy and childhood. Frequently the consequence of other diseases. The influence of the disordered abdominal viscera on the spinal cord. Under what circumstances distortion of the spine occurs in the child. The causes which induce this distortion. The three objects to which attention should be given in the treatment of the disease. A remarkable case described. The treatment of the case which ended in a perfect cure. The limited ideas entertained concerning the influence of friction. The two modes in which this operates. The state of the muscles of the back in spinal affections. The disorders of the spine at the time of teething. The effects to which they give rise, and the treatment of them. Spinal curvature at a later period of life. The usual causes of it.

Differences of opinion concerning the region of the spine first affected. The views of Coulson and Mayo. The treatment which should be adopted. The advantages of friction, and in what way it should be used. Disease of the spinal cord, arising from chronic affections of other organs. P. 363—387.

This Work

IS DEDICATED TO

FREDERICK FOSTER QUIN, Esq., M.D.,

THE FIRST WHO INTRODUCED HOMOEOPATHY

INTO ENGLAND,

AND ONE OF THE MOST ACCOMPLISHED PHYSICIANS OF THE DAY,

IN REMEMBRANCE

OF FAVOURS RECEIVED BY THE

AUTHOR.

A

DOMESTIC PRACTICE OF HOMŒOPATHY.

INTRODUCTORY REMARKS.

A WRITER who undertakes a work of this kind conceives either that it is wanted or that it will be useful. Without one of these considerations there would be no incentive to enter upon it. Every literary or scientific undertaking that confers a benefit on society may be said to be wanted, having for its object mental, social, or physical improvement.

There are already many excellent manuals which treat of homœopathy in a popular manner rendering it susceptible of domestic application. Each of these has its distinguishing merits. It has, however, appeared to me that these works generally are not sufficiently simple to be practically useful to those for whom they are intended. Fuller directions might be given, and fewer remedies recommended, very often with decided advantage. Those who are not acquainted with the nature and causes of disease should not be embarrassed by refined distinctions in regard to either remedies or symptoms. The more important of the latter should be clearly pointed out, and their value, as guides to treatment, should be explicitly stated. If more detailed information is required, though the utility of it is questionable to those who know little or nothing of the animal system, there are treatises which will furnish it. But as a rule, where it is needed, the skill of the regular practitioner should be sought.

Few things are more difficult than to adapt a medical work to the wants of that public, which knows nothing of the exquisite machinery of the body, or of the functions which it performs. The reason is, that the writer of it cannot sufficiently place himself in the situation of those who have to use it. He himself sees clearly what he would do under given circumstances, but those whom he addresses have not that lucid and comprehensive mental vision. They are liable to see, from their embarrassment, what does not exist, and to overlook that which does. At best they see only obscurely. Theirs is a twilight state of the mind though they may flatter themselves it is in broad day.

It is therefore evident, that to make a work of really practical value for such persons,—to meet the requirements of families, in which it may often be consulted with great convenience and advantage, its characteristic features should be, *simplicity and fulness of directions*. Nor should the latter be confined to the selection of medicinal agents, a matter of the first importance, but whatever else suggests itself to the mind of the writer, as calculated to control or influence the course of disease, should be stated, and in a way that will inspire confidence in its application. Let the why and the wherefore, when it is possible, be explained.

Such, in my opinion, are the views which should guide the writer who purposes to instruct the non-professional public homœopathically, so as to render the employment of remedies in the highest degree safe and efficient, or more justly speaking, in the treatment of disease.

It must not be imagined from these observations, that it is my intention to cast any reflections on those who have written on the same subject and for the same object. Far from it. Their works display an ability beyond my powers. Nevertheless, another person, looking at the wants of the

public from a point different from his predecessors, and not unfamiliar with their difficulties, may meet some of these wants in a way which has not hitherto been done.

It is a generally received opinion, strange to say, that the practice of homœopathy is perfectly easy. It is certainly regarded in this light by those who know little of it, but not by those who have deeply studied it. It offers a large and a fine field for the highest intellectual powers, and the more profoundly it is examined, the greater will the requirements appear to be necessary to do it justice. It is imagined to be a simple affair of symptoms, and the selection, without any difficulty, of appropriate remedies to subdue them. It is true that the treatment, whatever be the line of practice pursued, must be altogether regulated and governed by symptoms which fall under observation. To detect, and interpret these justly, are, however, two very different things. They have not a language or signification which speaks *equally* to every one. On the contrary, their meaning, when they are neither few nor simple in their character, is as diverse as are the minds which contemplate them. They present something in common to all, but beyond what is obvious to the ordinary understanding, there is much that is suggestive and instructive to the experienced and enlightened practitioner. He frequently sees in these symptoms, not merely a local affection, which alone is seized by the amateur, but a state of the constitution which to him may be a source of solicitude. The shadows which coming events cast before them are not unobserved by him. An accurate perception of these events, and a thorough appreciation of the shadows,—the undefined phenomena of disease,—constitute the accomplished physician.

It must not, however, be inferred from these remarks, that the non-medical public are incapable of using or prescribing homœopathic remedies in numerous cases with

success. This is not the opinion intended to be conveyed. My object is to point out the difference between the experienced practitioner and the non-professional homœopath, in the analysis and treatment of disease, and in order that the latter may not have an overweening confidence in his own powers. He may often do great good, and it is desirable he should attempt it. To aid him is the aim of this work, and of other productions of a similar character. My best efforts will be devoted to his instruction, so that he may in the domestic sphere exercise a legitimate and beneficial influence.

It has likewise appeared to me that most of the manuals of domestic homœopathy are defective in another point of view, or, certainly, are not so generally useful as they might be made. They treat almost exclusively of homœopathic remedies. They say nothing of the application of water under different forms, of friction, and of other means of unquestionable efficacy. The medical practitioner of the present day, whatever system he follows, if he ignores these, as matters foreign to his profession, regarding them as belonging to a particular class of men, deprives himself of invaluable agents in the treatment of disease. His character is not to be defined as that of a man who gives drugs, whatever may be the dose; but one who employs whatever seems to him best calculated to arrest or mitigate morbid action. The *mere drug man*, whether homœopath or allopath, is often an inefficient, and occasionally a dangerous man. The animal system is before him, and if familiar, which he ought to be, with its wonderful powers, its nervous and circulatory conditions, the relations of one class of organs to another, and the mode in which one may be made to influence the rest, he will find in many cases, that, conjointly with homœopathic remedies, there are other means that will energetically co-operate with these in the curative process. Why

limit himself to one class of agents when disease is intractable or fraught with danger? His mind should be wide awake to all the resources of art, and they will open themselves out in the ratio of his knowledge of the constitution of the animal economy, and of the means which nature abundantly places at his command.

It must not be inferred from these observations that I wish the homœopath to become a water or hydropathic practitioner. Nothing of the kind. There are admirable establishments for the carrying out of the water system. But why should those who conduct them have a monopoly of the good, which, in various forms, it is capable of conferring? My remarks are intended to enforce this truth, which cannot be kept too prominently in view, that it is the duty of the homœopath to enlist into his service whatever there is in water, or in anything else, that will aid his salutary efforts, or which may cause these to be salutary, when otherwise they might be inadequate to the emergency of the case. My faith in homœopathic remedies is not less than that of others, nor are they deviated from in the treatment of disease. But surely that is no reason why I should not, at times, see advantages in other things, and employ them, when their utility is sanctioned by experience. In the course of this work it will be seen in what way, and to what extent, other means may occasionally be brought into requisition; and, until then, let the reader suspend his judgment, and particularly if he have an impression, that I have less confidence in homœopathic remedies than Hahnemann himself had. Let me not be misjudged.

The medical practitioner is the last man that should envelope himself in prejudices, or allow them to encumber him; for, at the best, he is like an individual exploring regions with which he is imperfectly acquainted—regions but darkly seen from want of mental light. How restless,

then, should he be to gain this light ; but it will never break upon his eye or mind through the medium of prejudices. How is it that improvements generally march so slowly, and especially if unfavourable to the idols which are worshipped ? Prejudice stands in the way, or interests are imagined to be affected by the proposed innovations — interests in relation to self, and not to others, to whom the innovations might be invaluable blessings.

Another subject, to which it is important here to allude, is that of diet. On this matter the homœopath is usually extraordinarily strict, and his opponents, who can see no efficacy in small doses, ascribe the good effected to this cause, and to the confidence which is inspired in his patients. We are supposed to have a monopoly of the faith of mankind. Why not, then, attempt to do good themselves in the same agreeable manner ? It would be more acceptable to their patients than their drugs, and would not be attended with the same evils, the weakening or exhaustion of the animal system, and the long disturbance of its natural functions.

I am not more strict in regard to diet than I was as an allopath. In acute cases, the patient is seldom able to take anything beyond simple fluids, and these are ordinarily equal to his necessities. His own wishes generally suggest what is best for him, and these seldom go far beyond water. When he is not confined to the bed or house, his diet must of course be regulated according to the nature of his complaint, keeping in view his previous habits or his usual mode of living, and any peculiarities that may appertain to the constitution. As an allopathic physician these matters had my consideration, and as a homœopath I am not more stringent in the enforcement of them.

The homœopaths generally have strong objections to tea, coffee, wine, spirits, condiments, and other things, even in trifling affections, *on the ground that they interfere with the*

operation of their remedies. If the taking of these different articles in moderation is not *obviously* opposed to the symptoms which exist, I do not object to them *from an apprehension they will prevent the action of the medicines prescribed.* I have not found that they do, and I have had ample opportunities for observation.

I may possibly displease some of my homœopathic friends by these remarks. They must allow me to be as independent in the expression of my opinions as a homœopath as I was as an allopath. My success in the treatment of disease has not, I will venture to say, been less than theirs. Hence the privilege I claim to speak out.

Dr Epps, an intelligent physician and a distinguished writer, says :—" It may be asked, *Why object to coffee and tea ?* The reason is, that both *coffee* and *tea* are medicines. Coffee is more decidedly medicinal than tea : tea produces that peculiar *sinking at the pit of the stomach* so common to tea drinkers."*

So strongly impressed is the same writer with the injurious effects of tea, that he observes in another part of his work, that "the attachment to it is a very great obstacle to the progress of homœopathy." This in my opinion is an ill-grounded prejudice, formed without a due consideration of the circumstances which constitute the *medicinal* action of remedies as well as articles of diet. The progress of homœopathy is certainly not retarded by the attachment to tea, but to a great extent by the nonsense which is written about tea and other kindred matters.

I have been a tea drinker, and in very liberal quantities—few, if any, to a greater extent—for more than thirty-five years, and, I am happy to say, I had never any sinking at the pit of the stomach. Tea will occasionally cause this; but it is not

* *Domestic Homœopathy*, p. 218, fifth edition.

the rule, but the exception with respect to those who are in health, and whose mode of living otherwise is what it ought to be. I will further observe, that there is no beverage that mankind are in the habit of taking as an article of diet, that will agree with so many persons as tea, and none comparable to it for its gratefully stimulating and refreshing properties. This is not the prevailing doctrine, but it is mine, and it is not difficult to support it on physiological grounds.

I will select tea as an illustration of my views and argument. It is objected to because it acts *medicinally*—that is, it produces an effect *peculiar* to medicinal substances. This is an error. It does nothing of the kind. *No article that is taken habitually retains its medicinal effect.* The habit destroys this. It does not destroy the action of tea on the animal economy; but this action, subdued by use, is no longer in PECULIAR and UNACCUSTOMED relation to the latter—conditions necessary to impart to tea its medicinal influence, *and equally so to all remedial agents.* Why do these, in small doses, affect the functions of life, at times arresting disease as if by magic? From two causes: *the properties with which they are naturally endowed, and the extraordinary co-existing susceptibility of the animal system from being a stranger to their actions.* Habituate the system to them and they would cease to operate medicinally.

The importance of this subject must be my apology for further remarks. It is agreed on all hands, that medicinal substances, whatever be their nature, may be given until they lose their proper or characteristic action, and become inoperative as medicinal agents. This is the case with allopathic and homœopathic remedies. Let me ask what it is that they have *lost* which prevents them from influencing the body as they did when first exhibited? Their properties clearly remain unchanged. They are in no degree modified.

Then what effect has taken place? The entire animal system has got accustomed to their action—in other words, this is no longer in PECULIAR relation to them, and it is on this that their medicinal operation depends.

How many of our patients are habitual smokers, and continue the practice even when under medical treatment, and yet this does not lose its efficiency. Tobacco surely has a strong medicinal power—far greater than that of tea—nevertheless it does not interfere with the salutary agency of homœopathic remedies. I have certainly not observed any such result; and yet tobacco may be and frequently is, injurious in its effects.

Diet is unquestionably a matter which every person should study for his own well-being. If he will exercise his mind properly, he is the best judge as to what suits him and what does not. It will take time to ascertain the fact, but let him make the attempt. His own feelings, if he will pay attention to them, will in the main lead him to a just conclusion. When suffering from disease he must then be guided by his medical adviser.

I think the subject of diet has been carried to an absurd extent by many homœopaths. The restrictions they lay down are not necessary to the cure of disease. If not necessary, why split hairs and refine in the way they do? Persons suffering from complaints which do not interfere with their ordinary pursuits do not like to be troubled with a long catalogue of things they must abstain from. Their circumstances, indeed, in numerous cases, do not allow them to conform to such requirements. Therefore, when *it is not imperatively necessary*, the regulations should be as few as possible. Were mankind just called into existence, and the intelligent homœopath were requested to lay down rules of diet for them, and to which they were determined to adhere, he certainly would, and wisely, establish a system of living very

different from what prevails. However, we must take man as he is, and do our best under disadvantages which neither eloquence, argument, nor time will correct.

It is alleged, as already stated, that tea gives rise to a sinking sensation at the stomach. Is there any article of diet that does not in some persons produce an unpleasant effect? I know of none. My homœopathic friends are deeply enamoured of cocoa. In their estimation it is everything that can be desired. It is not in mine. It suits some constitutions remarkably well, but it often disagrees with others. Where a grateful stimulus is wanted, which is frequently the case, to enable the stomach to facilitate or complete the process of digestion, cocoa will fail, and tea will generally answer. The former, as it is usually taken, is more *nutritious* than the latter. Hence its value in many cases, and its prejudicial tendency in others.

Most people eat more substantial food than nature requires. They clog the wheels of life by their indulgence. To such tea is an excellent beverage. It gives a freer motion to the machinery of the animal economy. The nervous system is agreeably excited, the circulation is accelerated, and the mind regains its buoyancy of spirits and its vigorous elasticity of action. Those whose nerves will not bear it will of course abstain from it. They belong to the cocoa class.

The sweeping accusations against tea are unjust. It is condemned without reason, without considering the circumstances which explain its utility, or which render it *inapplicable* as a beverage, and satisfactorily account for its occasional prejudicial influence. In what cases is this liable to occur? In delicate females, and in men to whom the same epithet may be used. The remarks in reference to the former will sufficiently apply to the latter.

Females, from their numerous or pressing household

duties, frequently take tea, as it allows them to pursue these without much interruption, or they take it from not having an appetite for what is more substantial. This is an exceedingly common practice. That in such cases a sinking at the stomach should at times be experienced is not at all extraordinary. On the contrary, it is perfectly natural, and ought to be calculated upon. Tea will not stand in the place of proper nutritious aliment; and if the stomach *receives this in due quantity*, we shall rarely hear anything of a sinking sensation. But why blame tea for what is owing to the want of food equal to the necessities of the body? It is the abuse, and not the legitimate use of it, that has led to its unqualified condemnation. When tea is taken under the circumstances specified it is improper. Cocoa would be preferable, because it would stimulate the stomach less, and give it what is more nutritious. The cry of 'Mad dog' causes the death of many worthy dogs; and the indiscriminate cry against anything blinds mankind to the good it possesses.

I shall of course be told that Hahnemann objected to tea. So he did. Great and illustrious men are not to be worshipped, but to be honoured for the discoveries they make and the TRUTHS they establish. The latter should be our guide, and not the men. The two should not be confounded. The one, if what the name implies, are immutable, the other are fallible. It is not given to genius to be exempt from the latter, though it may contribute greatly to the former. Hahnemann was an original and independent thinker, and has left a name that will go down, growing with the time that carries it along, to distant ages; but it would be puerile to assert that every opinion he has expressed is to be received unquestioned. His followers must keep in mind his example. *He thought for himself*; and if they refrain from doing the same, homœopathy will

lose much of its stirring, spiritual, and onward impulsive influence.

Another homœopathic writer not only objects to tea, coffee, and stimulants, but gives a long catalogue of other things which are to be avoided, as *detrimental* to health, "as eau-de-Cologne, eau-de-Luce, lavender water, strong-scented hair pomades, medicated tooth powders, but more especially camphor, musk, smelling salts, and essence of vinegar.* To be consistent the writer should have stated the danger there is in walking in a garden when the air is perfumed with the fragrance of flowers, or being in the vicinity of a fresh-mown hay-field. The odour emitted in this case *will* exert an influence on the animal economy, because it is not habituated to it; but the articles he mentions, if in *constant* use, may be set down as harmless. They will certainly not interfere with the operation of homœopathic remedies. The animal machine is indeed finely and delicately put together, if a little eau-de-Cologne or lavender water is capable of disturbing its functions. The manufacturers of these things must be in a pitiable state, as the atmosphere in which they work is filled with the scents of them.

If some of the writers on homœopathy would endeavour to get larger and juster views of the powers of life, and of the mode in which these adapt themselves to the varied circumstances of human existence, their works would gain in common sense, and lose nothing of their practical value. The progress of homœopathy is obstructed by the *littleness* which many of its advocates throw around it—a littleness indicating a want of liberal and enlightened mental culture, but especially of breadth of understanding. By the ridiculous importance which they attach to trifles, they ob-

* *A Domestic Homœopathy.* By Edward C. Chepmell, M.D. P. 64.

scure the glorious principles of Hahnemann. They retard the introduction of them into general use by the elaborate distinctions they make, the difficulties they state, and the sacrifices they exact. The advent of a master mind at this time, who would seize, and prominently display what is good, great, and simple in these principles, brushing aside the unessentials, would be a life-giving power to them.

When treating of disease in the following pages, the diet proper to each case will be pointed out. This will be far better than laying down here general rules, which will not have a fitting application to the numerous forms of constitutional disturbance.

In these introductory remarks, it may be interesting, and not uninteresting, to mention in what manner I became converted to homœopathy. My conversion differs from that of all others. It did not arise from a personal acquaintance with any homœopath. I knew no one who practised it, either lay or professional. I had read no work on the subject. I agreed nevertheless with my then friends, the allopaths, in thinking the doctrines, of which I knew nothing, except that infinitesimal doses of medicine were prescribed, were gross absurdities. I was not so bitter or unscrupulous as they were and are, in speaking of it, for it is not in my nature to be against that which I have neither studied nor taken any pains whatever to understand. Though a love of scientific inquiry did not lead me to seek truth in a new path opening out to the professional mind, it restrained and sobered the expressions of the tongue. It would be well if others, who have laboured far less for the advancement of medical science, would either endeavour to ascertain what homœopathy is, or admit, with the candour which becomes ignorance and a gentlemanly feeling, that they know nothing of it. To act otherwise is as foolish and unmanly, as it would be to speak evil of the good people who may inhabit

the moon, and are not as yet objects of perception. It will be time enough to do this when we see them; and it will be soon enough for our opponents to abuse homœopathy, when they can honestly say they have studied it and put it to the test of experience.

After the publication of a work in 1848,* which had occupied much of my attention, I subsequently engaged in an elaborate inquiry into the functions of the nervous system. In the course of it, it became an object of deep interest *to trace the relation of the nervous system to the diseased conditions of the body.* After prosecuting my researches with great care, and with no other feeling than to arrive at truth, the conclusion was unexpectedly forced upon my mind, that all diseases, whatever their nature, *originate primarily in a derangement of nervous matter.* As an illustration of the doctrine, I will take inflammation, and it is a matter of indifference what tissue or organ it attacks: suppose it is acute inflammation of the lungs. This may arise from different causes, but whether from a current of air striking the chest when wholly or partially exposed, the inhalation of irritating substances, or from damp and cold feet, does not affect the question. First a disordered, and then an inflammatory action, is manifested by the lungs. The depressing effect, if arising from a current of air operating from without, is *the result of an impression made on the nerves superficially seated,* and through these *the nerves of the lungs are influenced;* and hence the morbid phenomena which characterise the disease. If from cold air or irritating matters inhaled, the nerves of these organs are *directly* acted upon.

It is contended in the inquiry that no part of the animal system is *susceptible of impressions except nervous matter,*—a truth which it would be difficult to disprove, if not

* *The Philosophy of Animated Nature, or the Laws and Action of the Nervous System.* London: John Churchill.

absurd to attempt it. If this be acknowledged, it is evident that all diseases, whether acute or chronic, and in whatever tissue seated, *must originate primarily in a derangement of nervous substance*. The altered condition of the blood, and of the various secretions, and the structural changes which occur, are subsequent to *and consequent on the disordered action of a part or of the whole of the nervous system*.

These views may probably be regarded as only partially correct, inadequate to explain the origin of all morbid affections, except such as arise from the direct injury of organic structures requiring surgical treatment. Is it not clear that all virulent poisons, whether they instantaneously or gradually destroy life, act fatally from the impressions they make on nervous matter? This is a truth which will scarcely be questioned. The arterial and other tissues are likewise greatly changed occasionally in their nature. The former may become ossified, and from what cause? *The altered action of the nerves of the part*: and the same explanation applies to all structural modifications. The heart is also at times enlarged, giving rise to that condition which is known by the term *active aneurism*. The nerves of the organ have been over-stimulated, and the influence they exert on the minute arteries to which they are distributed, draws to the muscular tissue an augmented current of blood; and hence its subsequent growth,—a form of disease which no remedial agents can correct.

A morbid state of the body may be induced by the inhalation of deleterious substances, or by an impure atmosphere variously engendered. In this case the blood, modified in its constitution, depresses or excites, according to the nature of the elements received by the lungs, the whole of the nervous system, and the important functional changes which take place are due to the effect produced upon the latter.

The blood is occasionally too abundant and rich in its properties; and the diseases to which it gives rise may probably be imagined to have no intimate connection with nervous matter. This, however, would be a serious mistake. Nutritious and stimulating food, even in excess, would not create conditions of the circulatory apparatus prejudicial to the well-being of the animal economy from their affluence, had not the entire nervous system, from its aroused and vigorous operations, imparted unusual energy to the secreting and assimilating processes. The frequent occurrence of acute inflammation, under such circumstances, is explicable on this induced physiological state. Nervous matter is morbidly excited, is indeed keenly alive to impressions, both within and without the body; and to this cause is attributable its extraordinary susceptibility to disordered action.

The blood is sometimes deficient in amount as well as in vital qualities, and not from a want of nutritious food. And why? The nervous system is depressed, no longer abounds in its animating principle, and without this, in proper quantity, generous aliments fail to nourish and strengthen the animal frame. The properties of the blood are invariably an exact expression of the prevailing state of the nervous system.

It was from these, and other considerations, discussed at length in several treatises which will hereafter be mentioned, that I was irresistibly led to trace the origin of disease to the disturbed functions of nervous matter. Is it possible on just and comprehensive physiological principles to arrive at any other conclusion?

Having worked out with considerable labour and anxiety this important, and to me obvious truth, other views necessarily broke upon the mind. If diseases have the origin here stated, and the doctrine has not been combated

by any writer, additional and valuable light *is thrown upon the action of remedies*,—light which had not presented itself to any inquirer in this particular path of research.

The marvellous susceptibility of the nervous system to impressions of every kind will not be doubted: if diseases, therefore, arise from its disturbed condition, it appears to me that in the attempt to relieve or cure them, the means employed, whatever be their character, *will primarily act on nervous matter*. Whether the remedies be in large or small doses, prescribed to excite or diminish the action of the heart, to stimulate the liver, the stomach, or the different glands to improved secretions; or to correct that state of the capillaries, or small vessels, which constitute inflammation; if efficient in the accomplishment of any of these objects, it will be *by acting on the myriads of nervous filaments distributed to the tissues suffering from disease*. According to these physiological principles, morbid affections not only originate in the derangement of nervous substance, but are cured in consequence of the direct influence of medicinal agents *on the same tissue*.

Having arrived at this further conclusion, it at once struck me, and in a way that will not readily be forgotten, knowing the wonderful susceptibility of nervous matter to impressions, both within and without the body, *that minute doses of any of the remedies in use should be capable of affecting the disordered condition of every region of the nervous system, and in a degree adequate to the removal of disease*. This seemed to my mind a self-evident truth, and so firmly did it take possession of me, that I became nervously anxious to subject it to the sure test of experiment. In a short time opportunities occurred in my own family. At this time I knew nothing of homœopathy, or of the Law laid down by Hahnemann, according to which remedies should be selected in the treatment of disease. My igno-

rance, in this stage of the inquiry, was probably not without its advantages. The attention was fixed on one point, and one point only, viz., Will small doses—one sixth, tenth, or twentieth of the quantity of the remedies I had been accustomed to prescribe—so act on the animal economy as to produce a remedial effect, or, in other words, *an effect that would be evidence of their power?* The subjects of my experiments were several well-known tinctures and mercury. I was agreeably surprised to find that, of the former, a drop dose, and afterwards the fourth part of it, was thoroughly efficient as a remedial agent, and of a medicine of which five, ten, and twenty drops, according to the age of the patient, would have been considered a moderate dose. Stimulated by these limited researches in my own family, I then extended them to certain of my patients, taking care, however, that the mixtures were *coloured*, fearing otherwise it would be imagined that I had made a mistake, and had sent them water in place of the proper physic. In some cases, where mercury was indicated, and both allopathically and homœopathically, as I afterwards discovered, I added a grain to a certain quantity of pounded white sugar, and divided it into twenty-four powders, and requested the patient to take one three times a-day. What was the result? The disease in every case was cured, and it occasionally happened that the patient complained of his gums being affected; and on examining them, such was found to be the case, proving unequivocally the action of the remedy.

When I had pursued my inquiries thus far, I had the good fortune to make the acquaintance of an exceedingly intelligent homœopath, a gentleman occupying a confidential and highly responsible situation in the Bank of England. He, a warm advocate of the new system, recommended to my notice the works of Mr Marmaduke B. Sampson, and kindly

presented me with one of them. Having previously satisfied myself that minute doses of medicine would produce marked results, the perusal of this work, and of others by the same able and distinguished writer, made me a convert to homœopathy. I was subsequently much aided and befriended by a gentleman* who is ever ready to impart information.

The foregoing is the brief history of my conversion, the value of which, if it possess any, consists in this fact, not undeserving of attention, that without any leaning to, or knowledge of, homœopathy, by my own independent researches and experiments, I placed beyond all doubt the power of minute doses of medicinal agents to influence the functions of the animal system, and as a consequence, *their efficiency to correct disease.*

The great stumbling-block in the way of the allopath, and which prevents him from entering upon the threshold of investigation, is *the small dose*. Had he, however, an inquiring or philosophical understanding, or, indeed, were he anxious to satisfy himself as to the justness of the statements made by men his equals in intellect and position, he would test the truthfulness of them by experiment. He will not do this, and why? Because he is afraid he might possibly become a believer. He has not moral courage to do that which truth requires at his hands; and what in my opinion is of greater importance, the well-being of his patients. Were any one to tell me that there was a mode of treatment better than the one I have adopted, and its superiority came before me, backed by the authority of men whose intelligence and honourable character were unexceptionable, it would have my earnest and candid examination. Why should it not? Is not the profession of physic the

* F. F. Quin, Esq., M.D., London.

noblest of all pursuits, and should not the exercise of it call forth the highest powers of the mind, and the best feelings of the heart free from the trammels and bitterness of prejudice? Those who follow it are, to a large extent, answerable for the lives entrusted to their care; and they are guilty of neglect of duty if they fail to inquire into alleged improvements in the art of healing. They do not, however, acknowledge its imperativeness. They forego the luxury of thinking, and the fascinating search after truth.

In speaking of the mode of my conversion to homœopathy, I brought under consideration some original views concerning the functions of the nervous system. The elucidation and application of them are elaborately displayed in three separate treatises,* to which the reader, if desirous of further information on the subject, may refer.

It is now nine years since I embraced homœopathy as a system of medical practice, and for more than three times that period I had been an ardent cultivator of the principles which characterize allopathy. I may be permitted to say an ardent cultivator, as I have never ceased to labour in the acquisition of professional knowledge, with the freshness, the high hopes, and the untiring energies of a student. My reward is the possession of more profound views than I should otherwise have attained concerning the nature and treatment of disease. This was the end for which I toiled—the object towards which my restless aspirations were directed; and in the evening of my days I have no disappointment nor regret to express. Wealth was not the

* *Practical Views on Nervous Diseases*, p. 530. London: William Headland, 15, Princes Street, Hanover Square.

Practical Suggestions for the Prevention of Consumption. London: W. S. Orr, Amen Corner, Paternoster Row.

The Nature and Cure of Consumption, Indigestion, Scrofula, and Nervous Affections. London: W. S. Orr, Amen Corner, Paternoster Row.

stimulus to my efforts, but knowledge; and what I sought I have gained.

I shall now lay before the public the results of my practice, and for that purpose shall give them as they are shewn by the last two years.* The success in the treatment of all forms of diseases that admitted of cure or relief has been immeasurably greater than it was on the old system. Many affections which formerly did not yield readily to the means employed, and consequently were sources of anxiety, are now cured with facility, and often in as few days as they previously required weeks. Independently of this advantage in respect of time, there is another of no less value. When the disease is removed, as in the case of acute inflammation of important viscera, the constitution has not been broken down by unnecessarily active and severe measures. The patient has not lost a third of his flesh from the persistence in them; nor are the numerous organs of the body *struggling*, and with difficulty, to regain their pristine vigour. He is soon prepared to enter upon his accustomed avocations. Are these advantages of no weight? Ought they not to excite reflection? If the allopath will not condescend to inquire into other and improved methods of treatment the public will, and they are beginning to be awake and are searching into homœopathy. The allopath is destined to follow. The tide which has borne him along is ebbing. It has been at its height.

In 1857-8, I had 668 cases of disease, and in 1858-9, 836; total, 1504. They have presented disease under almost every possible form. A considerable number of them have been *acute inflammation* of important organs, as the brain, the lungs, the throat, the liver, the stomach, the kidneys, the intestines, and the larger joints, and the treatment

* Ending July, 1859.

of them has not been followed by *one* death. A larger proportion have been chronic or sub-acute inflammation of the same organs, and the results have not been less satisfactory. Typhus and typhoid affections in adults and children have frequently occurred in my practice, and at times in the worst form, *but not one of these has failed to yield to the means employed.* Many cases of consumption have come under my care, and when in the *incipient* or *early* stage have, I have no hesitation in stating, in not a few instances, been cured, or else the disease has been arrested.

At the present time the practitioners of homœopathy have not their fair average of favourable cases. They are often employed as a kind of forlorn hope. The patients have tried other means. They have given the old system of physic the first chance, and when this fails, the cases then being wholly or in a great measure hopeless, they apply to the homœopath. Hence he has a larger measure of difficulties to contend against than his professional opponents. Time, however, thanks to the inquiring spirit of the age, is rapidly correcting this.

There are other causes which interfere with the fair play of homœopathy. Many who seek its aid are unreasonable in their expectations. They willingly remain under allopathic treatment for weeks or months without questioning the principles on which it is conducted, or the skill of the practitioner. The obvious power of the medicines given satisfies them that energetic means are employed. They have not the same confidence in the practice of the homœopath. They cannot imagine how remedies, which have no sensible taste, can be efficient; consequently, after a trial quite inadequate to cure or satisfactorily to ameliorate the disease from which they are suffering, they fall back on the old system. This, however, is not a common occurrence with the well-informed classes of society.

It must not be supposed that the lighter forms of disease only come under my notice. This would be a great mistake. As the allopaths do not call me in or attend with me, I am in the position of a general practitioner and have necessarily all sorts of cases to treat, and not a few that have been regarded as incurable or given up by the allopath.

The most gratifying results of my practice, from the success and facility with which disease has been cured, have been in the treatment of children. During the two years, I have had great numbers under my care suffering from all the affections to which childhood is incidental—as acute inflammation of the various organs of the animal system, scarlatina, measles, small pox, marasmus or wasting of the body, fevers, from the mildest to the most aggravated type, bowel complaints and diphtheria, *and not one fatal case have I had during this lengthened period.* If this public declaration is false it is not difficult to prove it. What does this say for homœopathy? I had not this degree of success on the old system, and, judging from the awful mortality among children, it is clear that those who practise it cannot adduce the same favourable results.

It has always appeared to me that the proper treatment of children has been misunderstood. The practitioner is seldom sufficiently sensible of the character of the constitution he has to act upon, the delicacy of its vital powers, and its extraordinary susceptibility to influences of every kind. In numerous instances the means employed take away the chance of recovery. The infant will rarely bear aperient or alterative remedies, or the application of a single leech, even when suffering from acute inflammation. If such measures are enforced, in twelve or twenty-four hours, it appears to have shrunk into half its natural size, the cause of which it is not difficult to explain.

There are two great surfaces of the animal body, the in-

ternal and the *external* surface, and in health the two are exquisitely balanced, and are constantly reacting on each other through the agency of the nervous system. In the robust adult the vital relations between them are frequently disturbed without any serious consequences, as on the one hand, by purging, and on the other by excessive perspiration. In the infant such derangements are in the extreme dangerous. The *irritation* of the bowels by purgatives or alteratives, the latter usually implying mercurial preparations, causes the blood to flow from without, inwards; and the heart at the same time being enfeebled in its movements, as an inevitable effect of the depression of the animal system, the circulation *externally* becomes exceedingly weak. Hence the sudden exhaustion of the powers of life, and the remarkable change in the general aspect of the body. The application of a single leech will often in the same brief period produce similar effects.

Experience has taught me that the only practice which fully meets the bodily conditions of the young, in the different affections to which they are subject, is the homœopathic. It readily subdues disease without making heavy or prejudicial demands on the vital energies. These in place of being wasted are made to co-operate in the curative process; and to secure their aid should be the study of the practitioner, whatever be the nature of the malady or the character of the patient. To control and use them wisely to the attainment of his end is the philosophy of medicine.

My practice, as a homœopath, has indeed forced upon me this painful impression, that deaths, from injudicious and improper treatment, are from 20 to 30 per cent. beyond what they ought to be. This is not an opinion hastily or inconsiderately formed. My observation and experience have furnished me with data sufficiently ample to entitle me to make it. It also receives some countenance from a remark

of the late celebrated Dr Johnson the leading medical journalist of his day. After an enterprising and active career of forty years, and a most successful one, he came to the conclusion *that the mortality would not be greater if patients were let alone to struggle against disease.* If he, with his intelligence, his vast experience, and his intimate acquaintance with the animal economy had arrived at this sad and melancholy conviction, pray what will be the results of the practice of the allopaths generally who fall far short of his professional qualifications? If in his hands it was a matter of indifference, as far as recovery was concerned, *whether patients were treated or not,* it certainly would not be a matter of indifference in respect of many others using the same drug system. The knowledge which guided him is not possessed by them.

The want of success on the allopathic system is not alone chargeable on its *inherent* defects, but on defects which belong to the greater part of those who carry it out. They know comparatively little of the properties of the remedies they employ and less of the functions of the body. Neither of these all-important subjects is a study with them. Unfortunately they feel not the necessity. They have that degree of ignorance which makes men comfortable. In every town there are exceptions to these strictures, men who know what they are doing and do it thoughtfully. The number, however, is miserably small.

The large amount of quackery which has sprung into existence within the last twenty years, is to be ascribed mainly to the ignorance which so lamentably prevails in the medical profession, and the inefficiency of the means employed. People have discovered the one and felt the other, and hence their readiness to take up with almost any system of treatment.

The deaths which have taken place during the two years

in my practice have been twenty-two, and the particulars of them are as follows:—

- A., aged 48, Consumption.
- B., „ 14, Do.
- C., „ 28, Consumption, paralysis, and disease of the heart.
- D., „ 23, Consumption.
- E., „ 6, Consumption, and extensive glandular disease.
- F., „ 14, Consumption.
- G., „ 48, Do.
- H., „ 29, Do.
- I., „ 31, Consumption. Seen only once, the day before he died.
- J., „ 10, Do., consequent on fever.
- K., „ 20, Do. Seen for the first time three days before his death.
- L., „ 64, Gradual decay.
- M., „ 59, Do.
- N., „ 60, Do., with dropsy. Seen three times.
- O., „ 64, Asthma. Seen once. Of long standing.
- P., „ 51, Do., Do.
- Q., „ 3, Injury of the brain from a fall.
- R., „ 62, Cancer of the stomach.
- S., „ 32, A large tumour in the centre of the cerebellum. The post-mortem examination was made by Mr Herbert Walker, surgeon of this town.
- T., „ 34, A deep-seated abscess.
- U., „ 17, Disorganization of the brain.
- V., „ 56, Disease of the heart.

The cases of consumption, asthma, and of organic and functional diseases of the lungs which have been under my care during the same period have been 190; of organic

and functional disease of the heart, 26; and of acute inflammation of the throat, with and without ulceration, in adults, 25.

The foregoing list of deaths shews from what diseases they have occurred. Such cases are and will always be incurable. It is not in medicine to renew the broken-down machinery of the body. The list, however, exhibits no case of death from the numerous morbid affections which the allopathic practitioner has daily to treat, and which are *nine-tenths of those which come under his care*. No patient has died under my treatment, either adult or child, from inflammation of the brain, lungs, liver, stomach, bowels, or of any organ; nor have I lost one from the various forms of fever, prevalent as this has been among children. The cases of inflammation and fever, the recovery of which seemed extremely doubtful, have, for the most part, been those that came into my hands after the *unsuccessful* treatment of others.*

In the writing of this introduction, one object, and not the least, has been to arouse an interest in those of the old

* A short time ago typhus fever prevailed to a fearful extent at Brimington, a village near Chesterfield. Numerous children had died after a brief treatment. I was requested to visit, under the following circumstances, two children seriously ill of the disease:—The surgeon in attendance had stated that one of them would die, and he could give no great hopes of the other. The parents having already lost one a few days before, and these being their only children were recommended to send for me. I saw the patients and prescribed for them. The surgeon, not knowing that I had been called in, repeats his visit and was informed that they were now under my care. On learning this he forgot himself both as a professional man and as a gentleman. He told the parents that I should certainly *kill* them. Their reply, and a very proper one, was, "You stated that one of the children would die, and that the recovery of the other was very questionable; we, therefore, were anxious to try another system." The children were cured and out of my hands in little more than a fortnight. I hope these lines will fall under the eye of this rash and discourteous practitioner. It would be easy to adduce other cases of the same kind that were condemned as hopeless, and which ultimately recovered under homœopathic treatment.

system to examine the claims of homœopathy, to put them to the test in the only way in which they can be fairly judged. Why should they not? The homœopaths are not their inferiors in education, attainments, or position. Most of them have come out of their own ranks, and many, while among them, had their confidence from the intelligence and professional knowledge they were acknowledged to possess. Do these mental qualities quit a man when he modifies his views on art or science? Surely this is not the calamity which befalls him. If not, let his professional opponents look on him as one like themselves, anxious to benefit his species. He cannot have any other motive, or be influenced by any other consideration. He does not court persecution. He would be thankful to pursue the even tenor of his ways without it. The desire to do good he has in common with them; and if they cannot agree as to the mode in which this shall be accomplished, it is a miserable and contemptible ground on which to fasten a quarrel, and one characterized by intense bitterness.

In the next Part it is my intention to commence with an investigation into the constitution and diseases of infancy and childhood, and afterwards to continue this investigation as regards the adult. This in my opinion is the most philosophical course to adopt. It commences with the study of the vital powers, at a time when they are just unfolding themselves, struggling into existence, and tremblingly alive to impressions both within and without the body. These conditions gradually disappear with advancing years, and other constitutional endowments present themselves to our notice, which in their turn will suggest matter for consideration.

As previously observed, my object will be to make this work as practically useful as possible. Should my success in the execution of it be equal to my anxiety, it will tend to spread a knowledge of homœopathy, and excite addi-

tional desire in the public mind to examine and test its merits.

In regard to the strength of the doses which it is most advisable to employ, great discrepancy of opinion prevails among homœopathists. Some are in favour of the *high* and others of the *low* attenuations. The former contain a *less* amount of the medicinal agent than the latter. The doctrines of Hahnemann do not restrict the practitioner to any particular dose : they have a reference only to the Law according to which remedies should be selected. An admirable writer in treating of this subject remarks : “I have not yet been able to decide whether the higher or the lower attenuations are the weaker or stronger doses.”*

I ordinarily use the *lower* and *middle* potences, the 12th being the limit of the latter, and seldom descend below the 3rd. The exceptions are in painful nervous affections, and occasionally in acute inflammatory diseases, and then I give the mother tinctures ; but in the latter case I am, however, somewhat doubtful as to the necessity or advantage.

My greater experience in the employment of homœopathic remedies convinces me, that in nine-tenths of the affections the practitioner has to treat, if not in a much larger proportion, the attenuations from the 3rd to the 12th, both inclusive, and not in large doses, will be found equal to the cure or amelioration of them.

* Jahr: *Pocket Dictionary and Concordance*, &c., p. xii.

CHAPTER I.

ADJUNCTS TO MEDICAL TREATMENT.

§ 1. *The Employment of Friction to the Abdomen.*

IN the foregoing pages I have alluded to remedial measures which may be used, occasionally, with extraordinary advantage, conjointly with medicinal substances, especially when disease is difficult to subdue, or when its cure would otherwise be tedious.

It will not be doubted, that the object of the practitioner is to correct disease in the shortest possible time compatible with the safety and well-being of the patient ; and it will surely not be urged that the articles derived from the three kingdoms of nature,—the animal, the vegetable, and the mineral—are used from any other cause or consideration, *than the supposed necessity of them.* There can be no particular affection for them, nor can there be any disposition to employ them, except from the conviction that they are imperatively required to arrest morbid action. It will likewise be admitted, that the less medicine of any kind which is introduced into the animal system, the higher will be its conditions of health, the more natural and vigorous its functions.

These are truths which will not be questioned. The healing art has no stereotyped rules, nor indeed any within which the physician shall strictly be confined. He who limits himself to drugs, whatever may be their nature or mode of

exhibition, and who can discover no advantage in anything else, when untoward or intractable symptoms arise, is in the position of an artisan, who cannot be induced to work with any other instruments than those to which he has been accustomed, though others may have been suggested that would materially facilitate his operations.

The ingenuity of man has an application to everything in nature; and, in every department of knowledge, is ceaselessly striving to advance from what is known to something higher and better as yet unknown.

The human body, in health and disease, is as yet only obscurely comprehended. Though minds of the highest order have for ages studied it, it still offers a great and exhaustless field for further discoveries, and of a character that will impart to the practitioner additional resources to control its disordered functions. Homœopathy is one of these modern discoveries, the result of patient and unwearied thought, and based on experimental investigations which time strengthens and confirms. The use of water for curative purposes is another, the beneficial effects of which are unquestionable in numerous affections. The method of Ling, in which the exercise of the muscles, under a variety of forms, is enforced, is a further and important contribution to the healing art, and deserves far greater attention than it has received.*

It is evident, from the existing state of medicine,—from the modifications it has undergone within the last thirty years, and chiefly from innovations which have disturbed prevailing opinions, securing to themselves no ordinary degree of attention—that the drug system, as hitherto practised, is rapidly on the decline. Mankind are sick of large doses of active remedies, are beginning to stipulate distinctly for

* See an excellent pamphlet on this subject by M. J. Chapman, M.A. Cantab., M.D. Edin. London: H. Bailliere, 219, Regent Street. 1859.

less quantities, and many are adopting other means of cure. These changes are indications of an inquiring spirit and of the steady growth of thought. Science is gradually taking the place of empiricism, and is destined, at no distant date, to produce results of which the most sanguine would fall short in their calculation. The revolution will be mainly due to homœopathy. Where this fails to be accepted as a truth, it creates doubts, in the mind of the practitioner, and of the patient, *as to the necessity of the amount of medicine usually prescribed*. Hence the greatly diminished doses of the present day, as compared with what were given quarter of a century ago. If essential before, why not now? The human constitution has not so altered,—nor have the agencies by which it is influenced,—as to explain satisfactorily the occasion of this difference. It is in part due to the more liberal cultivation of science generally, and the higher standard of medical education. The profession has now in its ranks minds of a high order, labouring in its improvement, and promoting this by the exercise of enlightened and independent thought.

In every case of disease, which awakens anxiety as to its course and termination, there are three points to which the attention of the physician should be directed: *first*, to ascertain the exact nature of it; *secondly*, the state of the constitution; and *thirdly*, in what way, independently of drugs, it is possible so to act on the powers of life as to aid the curative process.

The last consideration is one of great importance. It would be puerile to insist on the wonderful susceptibility of the animal system to a wide variety of agents. While this will be universally acknowledged, it is, however, clear, that it has led none,—save in the external application of water,—to the systematic study of it, bringing out in a prominent and practical form the mode in which it may be made subservient to medical treatment. The internal exhi-

bition of remedies is that on which the practitioner depends, and on many occasions it is certainly equal to existing requirements. But, even in such cases, the co-operation of other measures might possibly have been of essential service, might have cut short or lessened the duration of disease. When this is only slight, there are no grounds for anxiety,—a routine practice is sufficient to subdue it. But when other conditions fall under notice,—when the mind is embarrassed by their severity, and apprehensive of unfavourable results,—when no way distinctly presents itself affording an issue out of difficulties,—it is then that comprehensive views of the functions of life come to the assistance of the physician, suggesting other resources than those he has hitherto employed. To these the patient may probably be indebted for his safety. Burke has a fine passage bearing on the spirit of these remarks, though applied by him to a different subject, showing the inefficiency of a routine knowledge of official duties in cases of emergency. “But it may be truly said,” he observes, “that men too much conversant in office are rarely minds of remarkable enlargement. Their habits of office are apt to give them a turn to think the substance of business not to be much more important than the forms in which it is conducted. These forms are adapted to ordinary occasions; and, therefore, persons who are nurtured to office, do admirably well, as long as things go on in their common order; but when the high roads are broken up, and the waters out, when a new troubled scene is opened, *and the file affords no precedent*, then it is that a greater knowledge of mankind, and a far more extensive comprehension of things is requisite, than ever office gave, or than office can ever give.”

The application of friction to the body, in health and disease, is not new. It was practised to a great extent by the Greeks and Romans. The former had physicians called

Iatroleiptic, who used it and inunctions as curative agents, and in this light they were regarded, and strongly enforced, by Celsus and Galen.

The ancients, however, while fully sensible of the beneficial effects produced, were not acquainted with the physiological principles on which they were explicable; nevertheless, the practical information they acquired enabled them, in many instances, to modify the employment of these measures according to the exigencies of disease. But how much more efficient would they have been, had the application of them been guided by a knowledge of the ascertained laws of the nervous and circulatory systems, and of the pathological states which the disturbance of these induces. Of the latter they knew comparatively nothing, as it is only in modern times, and within a very recent date, that these have been objects of particular study leading to the establishment of just views.

In treating of friction, as applied to the abdomen, I shall state the considerations which, several years ago, directed my attention to it, and led me to use it as an auxiliary remedial agent. Before doing so, I trust I shall be excused in making the following remarks:—

The first half of my professional life,—a period exceeding seventeen years,—was devoted to the investigation of the circulatory system,—the powers by which the blood is moved,—the changes to which it is subject, from various causes, in its distribution and properties. The results of my inquiries were given to the world in several separate treatises;* and the reception they met with from the reviewers amply repaid me for my labours.

The latter half of my professional life, extending to the

* *An Experimental Inquiry into the Laws of Life*. Edinburgh: Mac-
lauchlan & Stewart; and Simpkin and Marshall, London. 1829.—*The*
Physiology of the Fœtus, Liver, and Spleen. 1831.—*Inquiry into the*

present moment, has been spent in the study of the nervous system; and the physiological principles, which my researches have brought to light, are before the public in the works previously mentioned.

I state these facts for the purpose of showing that the two great systems of the animal economy,—the nervous and the circulatory,—have been with me objects of special and elaborate examination; and hence it will scarcely be regarded as undue presumption, in claiming for the following observations the attention of the profession at large, and of others who take an interest in physiological and pathological pursuits.

In the course of an extensive practice, cases of typhus occurred, with symptoms which gave cause for alarm: as the serious prostration of the vital powers, the more or less complete unconsciousness of the patient, the small and frequent pulse, the dry and coated tongue, and other phenomena which characterise this form of disease. The treatment adopted occasionally failed to arrest the progressive aggravation of the malady. Hence the reflection: What other means is it possible to devise with the hope of better success? It was then that the following train of ideas suggested itself to my mind.

The abdominal viscera, from their size and the nature of their functions, require for their natural exercise, in general terms, *one third of the blood contained in the entire body*. The precise accuracy of the estimate is a matter of no moment. In connection with these viscera, there is a circumstance which it is important to mention: the muscular and membranous parietes, by which they are enclosed and protected from without, are yielding; hence, when the hand is used for the purposes of friction, it is brought all but into imme-

act with the viscera. The stomach, the liver, the intestines and kidneys, including the great vessels and trunks, are capable of being powerfully affected by it. The circulatory conditions of each undergo physiological changes beyond what would readily be conceived. They are unequivocally displayed in the constitutional effects produced:—the improved properties and **distribution** of the blood, as indicated by the amelioration of **disease**,—the clearer and livelier expression of the countenance,—the more natural temperature of the body, and the **altered** character of the secretions generally.

This description borrows no colours from imagination. **It** is a plain statement of facts, which, for a lengthened period, have repeatedly fallen under my observation. They **are**, indeed, of daily occurrence in my practice.

It is not difficult to explain the series of effects, which follow from the influence exerted on the abdominal viscera, modifying the distribution and quality of the blood throughout the animal system. Physiological principles will elucidate the successive steps of improvement. Is not the inquiry of immense practical value? The discovery of a new drug remedy, or of the efficacy of its properties to a particular disease, is hailed by the profession as a great boon. But how insignificant are its virtues, as compared with the salutary powers which friction furnishes to the medical practitioner! While the one has a special, the other has a general application.

Friction, through the medium of the hand, and continued for quarter of an hour, gently over the whole surface of the abdomen,* excites the circulation in the several viscera: it is an inevitable result. The blood is stimulated to vigorous motion, and this induced local change is quickly communi-

* A little olive oil should be used, as it facilitates the movements of the hand, and prevents irritation of the skin.

cated to parts of the circulatory system not directly acted upon; and the impressions which these receive are transmitted to others, until at length every artery and vein of the human body, from the large trunks to the capillaries, *assumes new physiological conditions.*

It is a law of the animal system, that when any part of it is affected, as by friction, or in any other way, the whole of the powers of life participate in the change. They are so intimately bound together, and so sensible of impressions, that to influence one is to influence all. A truth so patent and indisputable as this, is, nevertheless, very imperfectly apprehended by the profession; nor is it made use of in the treatment of disease to the extent of which it is susceptible.

The circulation of the abdominal viscera being excited in the manner stated, and, through them and the nervous centres, that of the body, other effects of a beneficial character follow. The lungs, whether suffering from disease or not, more perfectly oxygenate the blood; a greater quantity, in a given time, passes through them; consequently, a current, possessing higher vital qualities, is sent to every tissue. The heart contracts with increased energy, and those organs whose office it is to secrete, as the liver, the stomach, the pancreas, the intestines, the kidneys, the skin, and others, pour out healthier secretions, and in this way contribute to the production of *healthier* blood. These changes go on with the continued application of friction, and ultimately result in a marked improvement of the disease, whether acute or chronic, and in an unmistakable alteration in the aspect of the patient.

This is particularly seen in the expression of the countenance. In the course of a week or ten days, it acquires a clearness of colour which at once strikes the eye.

Thus far my observations have been confined to the cir-

ulation,—the extraordinary modifications it undergoes on the steady application of friction to the abdomen, morning and evening, for the short period specified, until the disorder, for which it is employed, is corrected. To leave the subject at this point would be, however, to do it injustice,—would be to keep out of view physiological principles of the highest practical value, the thorough understanding of which is necessary to the just appreciation of the method of treatment which is here recommended, and equally so to the elucidation of the phenomena to which it gives rise.

In the proper order of this inquiry the nervous system should have had the first consideration, as it is that on which friction primarily acts, and the cause of the series of vital effects produced in the circulation and constitution of the blood. The principles connected with it are, however, less easily grasped by the mind, than those which treat of the motion and distribution of the blood; and it is on this account that they have been left for subsequent discussion.

The great nervous centres, are the brain, the medulla oblongata, and the spinal cord. From the two latter, nerves are given off whose office it is to convey nervous power to the different tissues of the animal system. The viscera of the abdomen are most abundantly furnished with them, and chiefly through the medium of a particular system of nerves, termed the SYMPATHETIC.

All organs may have their functions excited through the instrumentality of nervous matter in two ways: *by influencing directly the nervous centres; and by impressions made on the peripheral extremities of nerves.* As one of the several modes, and a familiar example, in which the former may be affected, friction along the spine may be mentioned. The physiological conditions which this is capable of producing are indeed little understood; and hence advantage is seldom taken of it as a means of cure in

various forms of disease. It arouses the spinal cord to increased activity, and as a consequence, a larger nervous current is sent to all the tissues with which it is in direct connection. It is true that this is not an object of perception. It is neither seen nor felt. Such evidence, however, is not necessary to confirm the fact. It is well known that when the cord is mechanically irritated, phenomena occur, which prove not only the transmission of nervous power to organs which are the subject of experiment, but the conveyance of this in greater quantity. Evidence of another kind, in support of this doctrine, and to my mind not less conclusive, are the beneficial results which follow the employment of friction to the spine.

It will be imagined by many unfamiliar with the light which has been thrown, of late years, on nervous phenomena,—unfolding a new world to the researches of the physiologist,—that as the cord is enclosed in a strong osseous structure,—occupying a channel formed by the vertebræ,—it will be impossible for the hand to make any important impressions upon it through the latter. This would be a strange misconception of established facts. The bones offer no obstruction to the transmission of nervous power from the operator, or to his influence on the spinal cord by which it is excited to greater activity.

The *second* mode, in which vital energy may be imparted to organs, is by acting on the nerves distributed to them. On stimulating these by means of friction, THE MEDULLA OBLONGATA AND SPINAL CORD ARE CORRESPONDINGLY AFFECTED. They are roused to augmented action, in consequence of which additional nervous power is transmitted to the whole of the viscera: *and thus greatly invigorated physiological relations are formed between the two classes of organs*,—THE NERVOUS AND THE SECRETORY.

The soundness of these views cannot be questioned.

They are based on an acknowledged law of the nervous system, though as yet it can scarcely be said to have been seized in its practical application to disease.

The extraordinary changes which take place, not only in the abdominal viscera, but throughout the body, arise from the more liberal distribution of nervous agency, occasioned by the stimulus which friction communicates to the nervous centres. To act on the peripheral extremities of nerves, *is at the same moment to act on these centres*. The two are indissolubly associated in all the operations of life. The nerves are countless channels running to every particle of living matter, conveying to it the nervous principle in virtue of which it performs its function: the nervous centres are the sources whence it flows.

The processes of the animal system are effected by means of capillaries, so minute that they can be detected only by the aid of a powerful microscope; and the globules of blood circulating in them owe their motion to the vital endowments of the vessels themselves.* The contractility of these, by which their contents are urged forward, is to be ascribed to the nervous energy which they possess,—an energy constantly varying in amount in the successive *predominant* actions of the body, and particularly in all forms and stages of disease. Friction, by acting on so large a mass of nerves, as the viscera of the abdominal cavity present, excites these myriads of vessels, thereby enabling them to carry to their respective tissues a stronger and more vitalized current of blood. The improvement is not partial,—is not restricted to one class of organs,—but characterises the entire animal system. Hence the salutary changes which are observed, to enumerate which would be to state every symptom which marks returning health. The digestive functions are among the

* See my work on *The Philosophy of the Moving Powers of the Blood*. London: John Churchill, New Burlington Street.

first which display them. The appetite is quickened, and the ability of the stomach to digest the food it receives, is strengthened; the bowels, if in any degree irregular in their action, whether constipated or relaxed, become natural, except in those cases in which they are the seat of serious *organic* disease. The reason is obvious: both states are indications of a disturbed or inactive condition of the nerves and blood-vessels of the alimentary canal, and friction, by stimulating both, imparts to the one additional nervous power,—and establishes in the other, a more normal and vigorous circulation. These remarks, bold and somewhat unqualified, will to the profession sound strange. They are not, however, hastily or thoughtlessly advanced. They rest on the experience and sober observation of years. As already stated, the application of friction to the abdomen was the suggestion of physiological principles, and it has certainly placed in my hands an influence, judiciously and wisely used, of wonderful efficacy, conjoined with appropriate homœopathic remedies, in the treatment of acute and chronic affections. On many occasions it has enabled me to cure or relieve, when otherwise my convictions told me I should have failed; or had I been ultimately successful, the cases would have been tedious, and in this respect unsatisfactory.

Is it not my duty to make known such means? Shall I be told that this is not giving drugs, to which the physician should be confined, not presuming to look for resources beyond the ordinary routine of his practice? I believe in no such doctrine, nor will I believe that any practitioner will so define his functions. When he so limits himself on the occurrence of difficulties, it is not from the fulness of his knowledge, or the ease with which he arrests disease, but from the narrowness of his views concerning the diversified powers of life, and the various ways in which they may be beneficially affected.

There is no professional pursuit that offers the same fine field to the scientific and highly cultivated mind as medicine; nor one in which independent and unshackled thought finds more fitting exercise.

What is the worth of physiology, unless the truths it brings to light have a practical application to the correction of disordered vital action? It is of little value to know the laws which govern the movements of the heart, the circulation of blood, and the distribution of nervous energy, if a knowledge of them does not tend to improve the healing art. As yet, however, it has not done so in such a degree as might reasonably have been calculated upon.

It was this knowledge which opened out to me the advantages of friction, led me to put it to the test of experiment, to determine the cases to which it was applicable, and the rules to be observed in its employment. The remarkable changes to which it gives rise are shown to be easy of explanation, occurring according to clearly ascertained physiological principles.

The next important step in this inquiry is the nature of the deranged conditions of the body, in acute and chronic diseases,—particularly in respect of the circulatory system. Correct views on this subject are necessary to understand why friction produces its beneficial results.

The distribution of the blood is mainly maintained by three powers—the heart, the arteries, and capillaries. As long as they are undisturbed, each receives its due proportion, and performs with regularity its function. When, however, they are affected by disease, as indicated by the pulse, and other phenomena, *the motion and properties of the blood are correspondingly modified*. If the symptoms present are those of acute inflammation, the circulation is quickened and invigorated, and the blood becomes more highly oxygenated, in consequence of the whole mass in the

body passing through the lungs, in a given time, more frequently.* If, on the other hand, its motion is enfeebled, as shown by the slow, or quick and *small* pulse, *there is less blood in actual circulation than in health*—a portion has become stagnant in certain organs.

The question is, where does this take place, and from what causes? *It accumulates in the abdominal viscera to a greater extent than in any other part of the animal system.* Whenever the circulation is depressed, whether as an effect of disease or from other influences, as cold, and mental emotions of a prejudicial nature, congestion invariably occurs in the liver, spleen, pancreas, stomach, intestines, and in the large veins and enveloping membranes of the abdominal viscera. Physiological experiments, and pathological investigations establish the fact, nor is it by any means difficult satisfactorily to explain.

In the discussion of this subject, there are three classes of organs which merit especial attention: *the oxygenating, the circulating, and the secreting.*

The lungs, whose office it is to oxygenate the blood, are not, except when attacked by disease, liable to serious congestion, and mainly from two causes: the right ventricle of the heart, from its successive and uninterrupted contractions, sends the blood with *considerable* force into those organs, urging it towards the left side of the heart.

There is another condition exceedingly favourable to the continued circulation of blood in the lungs. They are the seat of great vital activity, from the emission and introduction of chemical elements. Carbon, at every expiration, is thrown off, and oxygen and nitrogen, at every inspiration, are received. The *conflict* between these agents in the lungs, and the important changes to which it gives rise,

* See the Introduction to the *Experimental Inquiry into the Laws of Organic and Animal Life*, by the writer.

will necessarily be of a nature tending to excite and maintain the motion of blood in them. Independently of these causes, which aid pulmonary circulation, the contraction and dilatation of the air-cells, characterising the two acts of respiration, will further contribute to the same end.

It is from these combined circumstances that the lungs, while other organs are suffering from congestion, in many disordered states of the animal economy, are wholly or comparatively exempt from it. This is indeed a wise provision of nature. Were they as liable to congestion as the liver and spleen, life would be jeopardized on numerous occasions on which at present it is free from danger. The accumulation of blood in them, in the proportion in which it occurs in these organs, by interfering with its chemical changes, would render recovery difficult, if not impossible, in cases ordinarily easy to cure. The blood, which would be created, deficient in vital properties, would aggravate existing symptoms, and increase the congestion of the abdominal and thoracic viscera. The constitutional disturbance would rapidly progress, and death would be the result.

The next class of organs to which attention is solicited, are those engaged in the circulation of blood,—as the heart, the arteries, the capillaries, and the veins. In health they work harmoniously together, each receiving its proper amount of blood ; and, from the influence they conjointly exert upon it, it is conveyed from one side of the heart to the other. The moment, however, that the body becomes the subject of disease, by which the powers of life are weakened and variously deranged, the relations previously existing between these organs are disordered, in a way, and in a degree, which few accurately realize—certainly not as a pathological condition abounding in practical suggestions. The heart, no longer contracting with its usual force, fails to receive and propel into the arteries the quantity of blood

which is natural to them ; consequently, they transmit to the capillaries and veins a diminished current, and this gradually becomes less with increasing debility. *A large portion is actually withdrawn from circulation*, is arrested in its course between the two sides of the heart,* and every step of this change is accompanied with the *deterioration* of it. This will be clear to the non-professional mind. The properties of the blood, leaving out of consideration differences in the quality of the ingesta, depend on the organs which produce it,—viz., the digestive, and the lungs in which it is oxygenated. The former, on the occurrence of disease, such as is here contemplated, are unequal to their duties ; and the latter, receiving *less* blood to act upon, in a given period, the whole mass in the body will be deficient in its normal vital elements. It will possess an over-dose of carbon, and an under-dose of oxygen. Hence its unfitness for the purposes of life.

The blood, that for the time being has quitted the arteries, is wholly or partially at rest in the veins and capillaries of the abdominal viscera. The great venous trunks are gorged with it,—have far more than they possess in a state of health.

The last class of organs to which allusion has been made, are the *secreting* ; the examination of which has an important bearing on the subject in hand, viz., the cause of the *congestion* of particular viscera, as the liver, spleen, and pancreas, whenever the circulation of the blood is disturbed. The investigation, though brief, will present in a strong point of view the mode in which friction operates, and the remarkable effects it is capable of producing.

The secreting organs, as the liver, pancreas, stomach, and intestines, are not *continuously* active ; or in other words,

* *Arterial* blood issues from the *left* side of the heart, and, after traversing the entire animal system, returns as *venous* blood to the *right* side of the heart.

have only periods of activity marking the several stages of the digestive process. When this process is accomplished, the vigour of their functions declines. The comparative repose which follows is necessary to the re-establishment of their powers. In the intervals of this periodicity of vital activity they will be more susceptible of congestion than at any other time. They will receive less nervous energy, which will render them less efficient in the circulation of the blood conveyed to them; and hence the readiness with which this will accumulate.

This circumstance, however, is of trifling moment, as compared with other considerations. The liver is peculiarly liable to congestion from the nature of its structure, the quantity of venous blood which is sent to it, and from its intimate connection with large venous trunks, whose office is to collect and carry the blood from the lower extremities and the abdominal viscera, to the right side of the heart, to have its properties renewed in the lungs. No organ in the body has the same anatomical and physiological conditions. When the liver is thus affected, by impeding the free passage of venous blood in the direction stated, a corresponding effect is induced *more or less throughout the cavity of the abdomen*. This is the case, particularly with the spleen, the great veins and their branches, the mesentery, omentum, and the coats of the stomach and intestines. The blood, from the character of the existing disease, cannot be maintained in vigorous circulation. Hence a *portion*, and at times this is considerable, must accumulate somewhere, and, from the reasons assigned, it is chiefly in the abdominal viscera.

While these facts will not be denied,—based as they are on correct physiological and pathological views,—their value, as a guide to treatment, will not be justly appreciated. It will at some future time. Is it not from such congestions,

which the practitioner is frequently unable to overcome by the aid of drugs, that death inevitably ensues? He has seldom, indeed, a clear conception of this state of the internal organs. It is only obscurely apprehended by him. He loses sight of it in the general derangement of the body.

The blood, which, under such circumstances, is withdrawn from circulation, is to be regarded in two aspects: in the first place, it is of no use to the animal economy; and in the next, it is a positive and serious evil. *The efficiency of medical treatment depends on bringing it back into active motion*: and every portion that is so influenced, is a valuable addition to that which is struggling to carry on the functions of life; it aids materially in the successive steps of improvement, until, at length, this terminates in convalescence. Friction, by exciting nervous substance, induces these effects to an extent of which few, who have not observed them, can form any idea. It has many times enabled me to cut short fever of a typhoid type in a few days. And why? The matter is involved in no mystery. By acting on the nervous system in this manner, the depression, and general derangement of the vital powers,—the prominent symptoms of the disease,—are rapidly corrected; or when the success is less complete, the symptoms assume a much milder form.

I dwell on this subject from its practical importance, and shall further extend my remarks, shewing the morbid conditions in which friction to the abdomen is applicable, and why it gives rise to beneficial results. Were I not convinced of its immense value, as a remedial adjunct, I should not enter, at this length, into the exposition of the physiological and pathological principles essential to the understanding of it.

It may be urged that this is not homœopathy. True. Is the homœopath to see and acknowledge nothing good in nature, except the tinctures and the globules which he uses? His legitimate functions are to cure, and in the endeavour

to effect this, he is at liberty to employ whatever his knowledge or experience suggests. He is bound, to be consistent, not to deviate from the strict principles of Hahnemann; nor will anything advanced in these pages be in opposition to them. Hahnemann recommended mesmerism, under certain circumstances, and wisely; and his followers are among the intelligent advocates of the water treatment. The remedy here brought under notice, has this advantage:—it can be carried out by the attendant on the patient, or by some member of the family. Friction may, on some occasions, be performed by the patient himself, but in this case it is much less efficient. I shall now proceed to shew the nature of the cases in which the employment of it has been followed by beneficial results.

§ 2. *The Application of Friction in Typhus and Typhoid Fevers.*

It is not my intention to give here an elaborate account of the symptoms of typhus, the causes in which it originates, or the diversified forms which it assumes. The discussion of these matters belongs to a later part of the work. My business, at present, is to seize such general morbid conditions as are necessary to point out the use and elucidate the action of friction.

The commencement of typhus ordinarily creates no great alarm. The early symptoms are mostly slight; the pulse is quicker and smaller than usual, a sense of chilliness is experienced, though the skin may be hot and dry; the tongue is not much changed in appearance, but soon begins to be coated; the bowels are inactive, the urine is diminished in quantity, and variable in colour. The patient complains of no particular pain, except perhaps in the head. *The prominent phenomenon is the serious depression of the animal system.* This shews itself in a tendency to stupor,

and general derangement of the sensorial functions ; great bodily debility is rapidly induced. The progress of the disease is the aggravation of these symptoms and the ushering in of others, among which are not unfrequently profuse clammy perspirations, the more or less unconsciousness of the patient, the excessively furred and dry tongue, and the greatly lessened secretion of urine, which deposits a copious sediment. In the course of the disease, the brain, the lungs, the liver or other organs, become more or less the seat of inflammation, but this is rarely *acute*. It springs out of existing congestion, and expresses the *reaction* of the tissues struggling to relieve themselves of the burthen by which they are oppressed.

The symptoms of typhus are by no means uniform. They will not be the same in any two cases, owing to the differences of constitution, the habits of the patient, and other circumstances, which modify anterior to, and during the continuance of the malady, the state of the functions of life generally.

In the contemplation of these morbid phenomena one conclusion is obvious : *the depression of the nervous and circulatory systems*. The changes in the latter, leaving out of consideration external influences, as the condition of the air which is breathed, are altogether due to the influence of the former. A further inference is equally clear : that the blood has been largely drawn from the surface and extremities of the body to the internal organs, *and the whole of these have it more or less in excess*. The greatest accumulation will, however, be in the great veins and viscera of the abdomen.

The aim of medical treatment, under the circumstances here stated, should be to effect two objects : *to excite to increased and healthier action the nervous system ; and to throw the surplus blood from within, outwards*, in directions whence it has been derived. These are the difficulties with which the practitioner has to contend, though he seldom

views them in such a definite form. To overcome them, every kind of practice, previous to the doctrines of Hahnemann, has been tried, and unfortunately with very indifferent success. Homœopathic agents are invaluable in correcting the prevailing morbid conditions, in allaying local inflammation, and in stimulating the capillaries the contents of which are at rest or in feeble motion. The melioration of the disease has its origin in the improved action of these vessels, by which the circulation is invigorated, the oxygenating capacity of the lungs augmented, and the heart enabled to perform its office with greater regularity and force. The medicinal agents in question produce these results *by acting on nervous matter*.

When the symptoms, from their severity, occasion alarm, and do not yield satisfactorily to ordinary measures, it is then that other means are to be sought as auxiliary to those which are employed. Whatever may be the refined distinctions of the pathologist concerning typhus, one fact is evident and indisputable, that serious internal congestion exists, and especially of the abdominal organs, and on this the attention of the practitioner should be steadily fixed. His eye should not be withdrawn from it. Under such circumstances, the following will be found active and efficient remedies : let the abdomen be rubbed gently, increasing the pressure on subsequent improvement, with a little warm olive oil, for quarter of an hour, repeating the operation every six or eight hours according to the urgency of the case. After the friction, a piece of flannel, folded three or four times, should be immersed in hot water, and when wrung out, applied to the whole surface of the abdomen, placing over the flannel, mackintosh, or oiled silk, so that the heat and moisture may be retained. Should the heat not be retained, the flannel should be re-immersed as often as may be deemed necessary.

Suppose there is pain or tenderness in any region of the abdomen, or that it is excited by friction, this is no objection to the application of it, for its tendency, when properly used, is to soothe and not to irritate. One effect which is constant, on the employment of it, is the improved tone which is gradually imparted to the bowels, the evidence of which is seen in their action in the course of a few days, on which occasion *the motions are singularly natural considering the diseased state of the body*. But, whether the bowels be moved or not, they should be left at rest. *They are not stimulated by the presence of food*. Hence the importance of giving them repose until they can, in some degree, recover their normal vital endowments. To force them to act is to weaken them, and to aggravate the disordered conditions of other organs to an extent which greatly diminishes the chances of recovery.

It is generally imagined that there are morbid matters in the bowels which ought to be evacuated. There are none half so injurious to the system, as the efforts which are frequently made to remove them. The wisdom of letting nature alone, in many of her difficulties, is very inadequately understood, and in no instance is this more conspicuous, than in respect of these organs in a great variety of diseases. The prevailing impression is, both in acute and chronic affections, that they should be kept open, made to act, when from the debility or disturbance of the system they do not. This is a grave mistake. It is something like making a man pay money when he has to borrow it. The bowels, under such circumstances, as a general rule, have to *borrow* vital capital to meet the demand made upon them; and this has to be drawn from organs which have none to spare, but in fact are suffering from a deficiency of it. To force them to supply it, is often seriously to aggravate their already disordered condition.

In the foregoing observations are pointed out the leading pathological phenomena of typhus, the study of which suggested these auxiliary means. In my practice they have been of essential service, nor is it easy to overrate them, when judiciously used. Sufficient has been stated to guide others in the application of them.

§ 3. *The Application of Friction in Dyspepsia.*

Indigestion offers to the mind a greater variety of morbid phenomena than any other disease. It includes forms of derangement which may be regarded as separate and independent affections; and to do justice to these would be to write a volume, and not a few pages. My intention on this occasion is simply to bring under notice a certain class of symptoms, which, whatever treatment be enforced, are not unusually tedious or difficult to cure.

In delicate females, as well as in the less robust of the other sex, and at times in individuals of both sexes, possessing an average strength of constitution, the following symptoms often fall under observation: the countenance is pale and anxious in expression, the pulse small, and quicker than natural, the tongue only slightly furred,—occasionally it is clean, presenting a somewhat polished surface. The appetite is weak and fastidious, digestion slow and imperfect, and food of a substantial kind creates considerable uneasiness, or distressing pain at the pit of the stomach, accompanied with eructations and a rumbling of the bowels; the urine is mostly pale and not unfrequently copious; constipation is seldom absent, and sometimes it is extremely obstinate, requiring, according to vulgar apprehension, active aperients to overcome it, the tendency of which is to increase the evil they temporarily correct; the patient is nervous and excitable, easily fatigued on bodily exertion, and is unrefreshed by sound slumbers at night.

The foregoing are symptoms of common occurrence, and in this, or a less severe form, have generally existed for many months, sometimes years, and are often only partially relieved by the internal exhibition of remedies.

What is the view which the practitioner should take of this state of the constitution? On the correctness of it depends the safety and efficiency of his measures. It is clearly not derangement of the stomach alone, or of the intestines, or of the liver. They are all manifestly disordered, nor is it easy to say which is so disordered to the greatest extent, or indeed, which was the origin of the diversified series of existing morbid actions. *The whole animal system is now at fault*; and any view short of this would be short of the truth. The more important organs, however, are not equally affected; nor is it a matter of indifference to which attention should be particularly directed in the endeavour to establish health.

There are two facts, comprehensive in character, in connection with this general form of disease, evident, at least, to the intelligent and practical physiologist. *The first is the marked derangement of the nervous system*, the nature of which is its weak and disturbed state. It is *wanting* in nervous power from the poverty of the blood and its imperfect circulation.

The second fact is, this condition of the circulatory system arising from insufficient nourishing food, or from the inability of the digestive organs to convert it into the required vital fluid. The two facts, as expressive of the state of the vital powers, *must necessarily co-exist*.

The abdominal viscera are not oppressed by the *accumulation* of blood, nor can they be said to be congested, though, in some degree, this will be the case. Their comparative exemption from congestion arises from this cause: there is not in the body the amount of blood which is natural to it. *It*

has been expended in a greater proportion than it has been produced. Substantial articles of diet have not been taken, or only in small quantities; or if beyond this, the digestive organs were incapable of elaborating what was received into sound and abundant blood.

From these remarks it will not be questioned, that the prime object of the practitioner, in the attempt to correct, and that promptly, this state of the constitution, *should be to arouse the nervous system,—to set in motion a more liberal current of nervous energy*, the distribution of which, to the important instruments of life, will quicken and invigorate their operations. The improvement effected in them will react on the nervous centres; and the strengthened reciprocal action between the two, is strongly displayed in the beneficial results to which it gives rise. Friction to the abdomen, night and morning, in the way recommended, will produce the desired salutary changes, in a higher degree, and in less time, than any other mode of treatment *exclusively* employed.

There are other symptoms, as well as some of the preceding in a more aggravated form, which characterise indigestion; as a yellow or dirty tinge of the countenance, frequent nausea, eructations, sickness to vomiting, the water-brash, the furred tongue, the torpid bowels, the urine cloudy and depositing a thick sediment; and, at times, there is remarkable *distention* of the stomach and bowels, which, from its persistence, lose their usual tone, and the power to contract upon their contents.

In this state of the body friction is equally advantageous. The nervous and circulatory systems are thereby invigorated; the blood gradually recovers its natural properties, conveying to all tissues new life and energy.

I am fully sensible that these remarks on the advantages of friction, as a practical and energetic curative agent, will fail to make their due impression upon the professional mind.

The effects described, as arising from friction, will not be received with that confidence which is necessary to the carrying of it out efficiently. The pathological conditions, in which it is stated to be useful, are pointed out, and if correctly, on what grounds will its efficacy be questioned? The influence it exerts is involved in no mystery, nor is it difficult to understand. It is shewn to be explicable on physiological principles, which, though only briefly enunciated, will not be doubted by those, whose opinion on such matters has weight, and who alone can be regarded as authorities.

§ 4. *The Application of Friction in Phthisis or Consumption.*

It is only in the incipient stage of this disease, that it admits of cure, or that amount of relief which gives for a time the flattering assurance of such a remedial achievement. In its further and more aggravated forms, medical treatment, whatever may be the character of it, can boast of no large measure of success. There are occasionally extremely gratifying results when not at all calculated upon. They are, however, exceptions to a general rule. In the early manifestations of the malady this is not the case; or, at all events, there are numerous instances in which the judicious employment of remedies is followed by the happiest results. Such have frequently occurred in my own practice, and likewise in that of others. Hence the importance of endeavouring to attain clearly defined ideas concerning the nature of the affection, and the constitutional conditions out of which it arises. To enter fully into the investigation of this matter is not possible, within the limited space to which my observations must here be confined. Nevertheless, there are certain general facts of great practical value to which attention may be directed, and, if justly apprehended, these can scarcely fail to suggest

a line of treatment calculated to aid the salutary efforts of nature, or to create these when they do not exist.

The views which I shall attempt to develop in regard to the origin and nature of the disease will have little, if anything, in common with those which are generally entertained. I can here, however, give only the merest outline of them, but sufficient to enable others to judge of their soundness.

Consumption is an insidious disease. It ordinarily makes considerable progress before it awakens suspicion of its presence. Its prejudicial influence upon the lungs, and the constitution at large, is imperceptible to the patient himself, beyond an undefined feeling of weakness or exhaustion on bodily exertion, and slight embarrassment in breathing : at length symptoms arise which arrest attention. The respirations are less complete and increased in number; there is a short, and sometimes troublesome cough, with little or no expectoration; occasional pains in some part of the chest, or which are excited on taking a deep inspiration; the pulse is quicker than usual, and there is a tendency to night perspirations.

Such are the phenomena which mark the first stage of the disease. There is, however, an earlier one, and not undetected by the practised eye of the physician, when circumstances afford him means for accurate observation. The expression of the countenance, and of the whole body, would indicate to him internal mischief; and if the patient were questioned, or the chest minutely examined, there would be evidence of its existence.

The nature of the structural changes induced is the formation of tubercles in the lungs, which are described by Lænnec, as grey semi-transparent grains resembling millet seeds; and hence designated by him *miliary*. These subsequently enlarge, and undergo modifications which it is not my business at this time to trace. My object is to point

out the causes which primarily lead to the production of tuberculous matter, as correct ideas on this subject can alone suggest rational and efficient treatment.

The first step in the inquiry is to unfold the principles of vital action, or the laws according to which the functions of life are carried on. This will probably appear strange to some minds, and minds of a high order; but it is the only philosophical course to pursue in the effort to throw light on the origin and nature of consumption. Before proposing to determine what *diseased* action is, and the structural changes by which it is distinguished, we should first learn what *healthy* action is; or in other words, *the physiological conditions on which it depends*. The pathologist, however, has not adopted this mode of proceeding: he begins where he should end. While he investigates with elaborate minuteness the structural alterations in a tissue, and describes them with admirable fidelity, he altogether loses sight of the state of the constitution which has led to them and which co-exists with them,—a state which is an inseparable part of the malady on which he concentrates his attention. Phthisis, which appears to him *a local affection*, maintained by local influences, is nevertheless a disease of the entire animal system, *and some particular region of this* is in especial relation to the lungs which are obviously affected, and, with few exceptions, is the first and most influential link in the disordered chain of vital action.

To discover the seat and nature of this remote pathological condition, forming part of the existing disease, is to place in the hands of the physician a remedial power which he does not at present possess. As yet, indeed, pathology has done little to aid him in the practice of the healing art. It introduces no new medicinal agents; nor does it materially modify those which have been ordinarily used. What are its suggestions for improving the treat-

ment of consumption? They are not found in the works of the illustrious Lænnec;* nor in those of his followers. If, however, the contrary be contended for,—and it may with some truth,—nevertheless how trifling is the improvement, as compared with the immense labours which have been devoted to this department of scientific inquiry!

In the attempt to lay down the general laws which regulate and govern the processes of life, it is a matter of indifference what organ is fixed upon for the purpose of illustrating them. As I am treating of phthisis, but on this occasion only in reference to the use of friction, I shall select the lungs, confining my remarks principally to them, and the nervous centres to which they are in structural and functional relation.

The office of these organs is to secure two objects: the emission of carbonic acid, and the introduction of oxygen and nitrogen, to accomplish which, and the chemical changes characterising these operations, the blood is presented in finely attenuated capillaries to the inspired air. In each air-cell,—itself an exceedingly minute object,—the two

* I studied in the years 1823-4, under this great and accurate pathologist, and certainly his knowledge of the diseases which he had profoundly studied, did not render his treatment more efficient than that of others much his inferiors in pathological attainments. It must not be inferred from these observations, that I wish to underrate the value of such researches. Far from it. My objections are to the narrow limits by which they are circumscribed. How minute soever may be the examination of the lungs after death, consequent on phthisis, it does not in any degree elucidate the origin of the disease; nor does it throw much light on the nature of it. The structural changes which are found in those organs, do not lead us a step towards determining the causes in which they originate; nor does the pathologist furnish any satisfactory information on this subject: it is not indeed in his power, except through the medium of physiology. He must study nature in her normal operations, before he undertakes the task of explaining how they become disordered, or what is the character of their disturbance when it is expressed in structural changes of important tissues.

kinds of blood, the arterial and venous, are in active circulation. The power which effects this, and the successive contractions and dilatations of the air-cell, corresponding with the two acts of respiration, is *nervous*, derived from the two great nervous centres,—the medulla oblongata and spinal cord,—through the intervention of the sympathetic and eighth pair of nerves.

The physiological principles developed in reference to a single air-cell, will of course apply to the whole lungs, they being an aggregate of such bodies. The nervous filaments, which carry on the vital operations in these, are in direct connection with the nervous centres in question. The fact certainly does not admit of anatomical demonstration, except in this way: they are branches of the sympathetic and eighth pair of nerves clearly possessing such connection; and though much further removed from the nervous centres, than the latter, distance does not at all affect the continuous or uninterrupted relations insisted upon. To make a distinction between the two on this ground would be an absurdity. The links of a chain may vary in size, but as long as they are united, an impression made upon one end, suppose the transmission of electricity, would instantly be conveyed to the other. The filaments are the last links in the nervous chain; *and every modification in the physiological condition of the nervous centres*, produces a corresponding effect in them, and consequently in the actions of the air-cells. For example, whenever these centres are aroused to increased duties by *external* applications, the respiratory processes are proportionally augmented, from the flow of a stronger current of nervous power from within, outwards: if, on the other hand, the functions of these centres are depressed, which frequently occurs in disease, *the vital endowments of the air-cells are in the same degree affected*.

It is scarcely possible to overrate the practical impor-

tance of these views. They abound in novel and highly valuable suggestions in reference to the morbid conditions of the body. They throw light on the origin and nature of many of them; and if thoroughly understood, will impart to the practitioner additional remedial resources.

The soundness of the principles laid down may possibly be questioned, but certainly not by those who are familiar with the recent researches of physiologists, or with my own, long anterior to these, in which the same truths are developed and extensively applied.*

There are two kinds of evidence which establish the correctness of the foregoing train of reasoning.

It is proved by experiments which do not admit of doubt, that on irritating the nervous centres, as the medulla oblongata and spinal cord, the secretions of certain of the abdominal viscera are increased and greatly modified in character. The latter result is invariable. Is it not evident, therefore, that an influence has been communicated from these centres, along numerous nervous channels to the secretory organs, in fact *to the last divisions of their structure*, for it is in these alone that vital operations of the nature contemplated take place? They are accomplished by the last divisions of nervous matter which come in contact with mere *globules* of blood. It is important to keep this view in mind, as otherwise it would not only be impossible to account for the origin of disease, but the salutary agency of homœopathic and other remedies of remarkable efficiency. It is too common to regard morbid changes in the gross,—as they obviously present themselves to the eye,—without thinking of the anatomical and physiological conditions out of which they arise, and through which they may be beneficially influenced.

* My works on the *Nervous System* previously alluded to.

The facts which are here stated furnish one kind of evidence in favour of the line of argument pursued, showing in what way all parts of the animal system, in the exercise of their various functions, are acted upon by the nervous centres through the connecting links of nervous matter. The means, which the physiologist employs in his experiments to elicit phenomena establishing these conclusions, simply *aggravate* the operations of nature, displaying, in a strong point of view, the *mode* in which she acts when left undisturbed to carry on the natural processes of the body.

The other kind of evidence, which proves the connection of the different organs of the animal system with, and their dependence upon, the nervous centres for the animating principle of their actions, may be thus stated and illustrated: If irritating matters are inhaled by an animal, the lungs are excited to increased operations, more blood and nervous power is brought to them, the effect of which is to *augment* the physiological relations between these organs and the nervous centres; and the fact is seen in the transmission of a larger stream of nervous power to the *abdominal viscera*, increasing and modifying their respective secretions.

It is here necessary to remark, that the principal of these centres, on which the excited actions of the lungs operate, is the *medulla oblongata*, from which nerves arise, conveying, directly and indirectly, nervous power to the viscera of the abdomen. Hence when this nervous centre, not excluding the spinal cord, is roused, by the lungs, to increased activity, physiological effects are observed in the viscera in question. An augmented current of nervous energy is transmitted to them. The lungs, which are the occasion of this temporary nervous excitement, receive, also, a larger quantity.

The experiments, which unequivocally prove these facts, will enable us to elucidate the origin of important diseases, and also to suggest modes of treatment founded on just physiological principles. We see that every particle of organic matter, whatever its office may be, is in direct association with the nervous centres, and, during every moment of existence, is receiving from them that nervous energy, in virtue of which it executes its part in the general scheme of organization. Each air-cell is one of these particles, exercising the functions which have been stated; and perfect respiration depends on the aggregate of such vesicular bodies of which the lungs are formed, *having in integrity their nervous relations to the nervous centres.*

The development of these views is necessary to the introduction of the subject of phthisis. They are the basis on which the discussion of it must rest.

Certain persons,—and unfortunately they form a large portion of any given population,—are liable to, and suffer from this disease. It is interesting and instructive to trace, as far as it is possible, the causes of this liability. It is clear that there is a state of the constitution which predisposes to phthisis, and the difficulty is to determine in what this consists. My own opinion on the matter is very decided, and is the result of considerable observation.

The tendency to the affection, except in a way which will subsequently be explained, is not to be ascribed to any condition peculiar to the lungs; or, in other words, to any original defect in the constitution of them, which does not, in the same degree, distinguish the animal system generally. The vital capital they possess,—viz., nervous power, on which the phenomena of life depend for their manifestation,—is distributed relatively in equal proportions to all organs.

If the lungs are weak, from a deficiency of nervous energy, the heart, the liver, the stomach, as well as the rest

of the viscera, will be in the same state. It is on such agreement or harmony between the several parts of the body, that the distinction of the temperaments is founded,—a distinction which has a real existence in nature, and with which the physiologist is familiar.

The lungs are certainly peculiarly susceptible to tubercles; but this arises from their organization and the character of their functions. The presence of tubercles in this situation constitutes, however, *only a part of the existing disease*. This has its seat in the entire animal system, and not in any particular organ or class of organs, though the lungs, until an advanced stage of the malady, may appear to be alone affected. They are subject, it is true, to structural changes in the most aggravated form; and on these the attention of the practitioner is mainly fixed. Nevertheless, to understand the affection thoroughly, and to know how to treat it successfully, it must be apprehended in the whole of its pathological conditions and relations.

The consumptive constitution is *one of inherent nervous debility*. The nervous system is wanting in tone, in an affluence of nervous energy. Hence its extraordinary susceptibility to atmospheric and other influences. Exposure to the night air, followed by chilliness, is not unfrequently referred to; and with great truth, as the cause of the commencement of the disease. In fact, the *balance* of the powers of life is readily disturbed: those powers offer little resistance, under such conditions, to depressing causes; and the depression which occurs is not followed, as in persons possessing more vigorous vital endowments, by that degree of *re-action* necessary to the removal of the morbid effects induced.

This is a faithful description of the consumptive constitution; nor could it be made more intelligible, or rendered more truthfully exact, by any laboured exposition.

It may now properly be asked, In what way does con-

sumption arise? What are the steps which lead to its development?

The following is an attempt to answer these questions. The animal system, either by a gradual derangement of its functions, as from indigestion, or an expenditure of vital energy beyond its ability to support, or from exposure to prejudicial agencies, becomes disordered, has the balance of its powers disturbed. The first link in the morbid changes, is *the depression of the nervous centres*. They are no longer in vigorous activity, consequently they fail to transmit, as in health, the nervous principle from within, outwards, and the lungs, in common with all other organs, suffer from a deficient supply; but not, in the first instance, to a greater extent than the rest of the body.

The moment that the nervous power is conveyed to the air-cells, in an amount unequal to their requirements, their functions, the conversion of venous into arterial blood, and the emission of vapour, are at once imperfectly performed. These processes are either altogether or in part arrested, and the air-cells, implicated in this derangement, become *centres* of disease. They cannot throw off the matters which accumulate; and hence their degeneration into *miliary* tubercles.

The views which are here unfolded concerning the mode in which tubercles originate, but particularly the parts of the pulmonary tissues in which they are *first* developed, are strengthened by the researches of distinguished writers, though the latter have in no degree anticipated the pathological principles which are here advanced. Dr Copland, treating of this subject, remarks:—

“These observations, however, do not prove the vascularity of tuberculous deposits, but rather that this deposit, as respects the lungs, often takes place in the vesicular structure or air-cells of the organ, as supposed by Magen-

die, Cruveilhier, Carswell, Andral, and Kingston." The same writer further remarks: "As to the lungs, we may readily detect tubercles in the substance of the cellulo-vascular tissue, which forms the parietes of the *air-vescicles*, and the extremely small bronchial tubes opening into them."*

Though pathologists are mostly agreed as to the *primary* seat of tubercles, they have failed to account for their production. On the views which are here laid down, they occur as a natural result of *diminished* nervous power in tissues, whose office it is to be channels for the emission of substances, which, if retained, are locally and constitutionally injurious. The retention of them is the occasion of the tubercular nucleus. The number of such bodies, and the rapidity with which they are developed in the lungs, *are in the ratio of the depression of the nervous centres*. The influences which give rise to them *are seated in these nervous organs*. The lungs suffer as an effect of their disturbance, and also every viscus of the body, according to its structure and function. A definition of phthisis, to be accurate, must embrace the co-existing structural changes of the entire animal system: any less comprehensive view keeps out of

* *A Dictionary of Practical Medicine*. By James Copland, M.D., F.R.S. Vol. iii. pp. 744, 747.—It is a pleasure to congratulate this accomplished physician on the completion of his laborious undertaking, which has unremittingly occupied his attention for twenty years. It is one of the greatest literary and scientific achievements of the age, considered as the production of one mind. It is rich in a combination of excellences very rarely found in a medical work. The writer is an admirable physiologist, one of the first of his day. While he has deeply studied books for information, he has studied nature in her healthy and diseased conditions no less: and whatever may be the changes, in time to come, in regard to the treatment of disease, according to the prevailing school of medicine, his physiological and pathological researches will long be worthy of profound attention. His work is indeed a library in itself,—a monument of learning and of genius. Without the latter, and in large measure, how varied soever the former might have been, it would have been comparatively of little value. The genius of the writer has made the work his own.

sight the true nature of it, and proportionately limits the application of remedial measures.

Miliary tubercles are often found more or less dispersed *throughout* the pulmonary tissues; nor is this extraordinary, when the origin of them is considered. The nervous centres, having the same structural and functional relations to every part of these tissues, their depression or debility will exercise a general prejudicial influence. It will not, however, affect, with the same facility, or to the same extent, every portion of the lungs,—organic and physical causes, belonging to the latter, modifying the susceptibility of their several regions to structural changes.

The manner in which these small tubercular bodies pass into another stage, a further and serious encroachment on the integrity of the lungs, admits of easy explanation. When the first points of disorganization are formed, these organs are not alone the seat of disease: they are only one end of the chain of morbid action: the other is *the nervous centres*. The two re-act on each other, aggravating the functional and structural conditions of each, and in this way: When tubercles are established in the lungs, according to the degree of their development, they *interrupt the flow of nervous energy from these centres*, the result of which is *to diminish still further their activity*, and gradually to increase *their* disorganization; thereby lessening their ability to transmit nervous energy to the pulmonary tissues. The evidence of this is seen in the rapid extension of disease in these tissues, and in the nature of the modifications which tubercles undergo. They enlarge, and become a mass of soft tuberculous matter. The nervous power in the direction of them being arrested, such portions of the lungs lose their vitality, and in consequence fall a prey to the inhaled chemical elements of the atmosphere.

Further facts may be adduced in illustration of the sound-

ness of these pathological principles. When the lungs are thus affected, what is the state of the animal system generally? Does not every organ afford abundant proofs of functional and structural derangement? And from what cause? The inability of the *nervous centres* to maintain in healthy and vigorous activity the numerous processes of life. They fail in the transmission of nervous energy; and in consequence, the disease and emaciation of the body.

The views which are here brought forward may be further strengthened. In the early stage of consumption, tubercles are rarely found in any other part of the body than the lungs, the reason of which will be subsequently explained. When the affection has made considerable progress, they begin to appear in the liver, the spleen, the alimentary canal, and other viscera. Their presence in the intestines, in the form of ulcerations, is the occasion of obstinate diarrhœa, which remedies in vain attempt to correct.

It is observed by Dr Copland, that "*the presence of tubercles in several organs at the same time* has been explained by supposing that the tubercular matter has been absorbed from the original seat of its formation, introduced into the circulation, and *re-secreted* or deposited in the parenchyma of other organs, the case being the same with tubercular matter as with pus."*

The limited and imperfect views entertained concerning the origin of tubercles naturally gave rise to this opinion, which is certainly incorrect. The *consecutive* formation of them in different organs does not arise from the absorption of the tubercular matter. The cause of their simultaneous and consecutive appearance is to be attributed to the same pathological condition,—*disease of the nervous centres*,—

* Dr Copland, *opus cit.*, vol. iii. p. 750.

which has been overlooked by writers in their endeavour to explain the production of tubercles.

The disorder, which is primarily induced in these centres, increases in severity, extending from one portion of their tissue to another, until at length they are equally affected throughout. It is then that structural changes manifest themselves in other regions of the body, evidence of the serious defects existing in these important nervous organs. This, however, is not always easy satisfactorily to detect. Nervous substance requires great care in its examination; nor does disease ordinarily leave in it those unequivocal indications of derangement which are readily traced in other structures. The spinal cord may be increased or diminished in firmness; but neither condition enables the pathologist to form a just idea of the functional disturbance consequent upon it.

The foregoing is a general outline of the origin and nature of phthisis. The pathological principles have nothing in common with those which have hitherto been advocated by the highest authorities in researches of this kind. They have, at least, the merit of novelty, and it will remain with others to shew that they have not that of truth. To prove this will, in my opinion, be a difficult task.

It has been stated, in the course of these remarks, that while the lungs, in their morbid condition, *constitute only a part of the disease* to which the term pulmonary consumption is given; they are, nevertheless, the first to exhibit obvious symptoms of derangement, and for some time are considered as alone affected. It is not surprising that this view, though erroneous, should be generally, if not universally, entertained. The cause of the early development of tubercles in the lungs, will be found in *the character of their structure and the functions which they exercise*.

The secretory organs, as the liver, stomach, kidneys,

intestines, and others, have a great advantage over the lungs when constitutional disturbance arises, such as characterises the commencement of phthisis, and numerous other affections. Whether their secretions be diminished or increased, and, in either case, they are disordered in their properties, *they are thrown off*,—not retained,—to the relief of the abdominal viscera themselves, though to the detriment of the animal system at large. For example, on the occurrence of depression of the nervous centres, the capillaries of the liver, though directly influenced by it from their nervous connections with them, continue to pour out bile, which escapes through its natural channels. The hepatic tissues, to this extent, are clearly benefitted. Had not these *constituents* of the blood which go to the formation of bile, this issue, the retention of them would incapacitate the viscus for the performance of its office, and would rapidly lead to its disorganization. The same may be said of the rest of the viscera. *They all more or less relieve themselves in the same manner.*

The lungs are very differently circumstanced. When the nervous filaments, which govern the vital actions of the air-cells, fail in the accomplishment of their duties, the conversion of venous into arterial blood is, at first, imperfect, and at last altogether ceases. The minute vessels of the air-cells become congested, in consequence of which the carbon, and other elements, are retained by them. The oxygen and nitrogen inspired can have little, if any effect upon them; certainly not as in health. The pulmonary tissues, in which they are accumulated, lose their vitality; and hence present centres of disease, the earliest evident form of which are *miliary* tubercles. Had the lungs, the same facility, as the liver, and other organs, *for getting quit of the chemical elements brought to them*, they would be no more susceptible of such structural changes than any other

part of the body. It is these anatomical and physiological conditions which create the *predisposition* to them, and not any inherent weakness of the lungs which does not equally belong to every organ of the animal system.

There are other important considerations bearing on this inquiry, which add additional weight to the doctrines advanced. Andral, one of the highest authorities on this subject, deduces from his researches concerning the origin of tubercles in the lungs, the following conclusions:—

“The pathological process which precedes the tuberculous secretion is an *active* sanguineous congestion, similar to that which precedes every process of secretion, normal or otherwise.”

“The secretion may take place in several of the tissues which enter into the composition of the lungs.”

The fallacy of these pathological views is to be traced to three causes:—

1. The character of the consumptive constitution is not taken into account,—the unquestionable weakness of the nervous system. A just conception of this is essential to the establishment of sound and comprehensive pathological principles. The weakness which prevails, and strongly marks this kind of constitution, will not give rise to an *active* secretion, nor does this explain the production of tubercles. The first stage of the disease is not an *active* but an *arrested* secretion.

2. The distinguished writer did not apprehend, as a matter essential to the development of correct views, the nature of the relations existing between the lungs and the nervous centres, the dependence of the former upon the latter for the nervous power necessary to the performance of their functions; and consequently, the morbid effects, which the *depression* of these centres produces in the lungs, were not at all realized by him. His investigations com-

mence with tubercles in their earliest formation, in place of beginning with these centres, and embracing in his inquiry the condition of the nervous system generally.

A diminution of nervous energy in the pulmonary tissues, arising from depression or weakness of the nervous centres, will not occasion "*active sanguineous congestion*" in them. On the contrary, it will, at first, render their vital actions imperfect,—imperfect from nervous debility; and at length, in certain points of these tissues, they will be altogether interrupted,—vitality will cease in them. Hence the disorganization which follows. Congestion will necessarily be induced, but not "*active sanguineous congestion*" to which the writer ascribes the secretion of tuberculous matter. This matter owes its origin to arrested vital action.

3. Another important subject, which this admirable pathologist has overlooked, in his attempts to trace the origin of tubercles, is the remarkable *difference* between the structural and functional conditions of the lungs, and those of other *secretory* organs, which has been alluded to and which is subsequently fully explained. The derangement of the latter, the partial cessation of their operations may be of no great moment. The matters which it is their business to secrete, have facilities for escaping which are not possessed by the lungs. When the secretions of the latter are interrupted from nervous weakness, the stagnation of them lays the foundation of disease, and the tendency to this is greatly increased by the active principles of the inspired air.

When the capillaries of any of the abdominal viscera are unable to convey forward their contents, and consequently become congested, they may remain in this state for a considerable period without serious injury to themselves, and from this cause: the blood which is stagnant within them, *is not acted upon by chemical elements from without*; it is

at rest, and undergoes no particular change, except what necessarily occurs in it from its repose. This is obviously not the case with the capillaries of the lungs. When the blood ceases to move in them from the loss of vitality, arising from nervous depression, they become a prey to atmospheric agents, as oxygen and nitrogen. The former is clearly one of the most active elements in nature. In the healthy condition of the lungs, it seizes the carbon and carries it off in the form of carbonic acid ; and when the ordinary operations of the air-cells are arrested by the presence of disease,—as incipient tubercular degeneration of the pulmonary tissues,—*it then seizes upon the latter*, and completes the process of disorganization. In proportion as these tissues are withdrawn from the influence of vital laws, they become subject to those purely physical ; and in no part of the animal system, do the latter produce more rapid and remarkable results, than in the lungs.

The length of the preceding observations will scarcely require an apology. The matters of which they treat have strong claims on attention ; indeed it would be difficult to name others possessing anything like the same importance. The pathological principles here developed are not those of my predecessors who have elaborately studied the same disease. They are original, a distinction that is not to be undervalued, when accompanied with medical treatment in accordance with them, which, as suggested and guided by physiological considerations, is likewise new. Empiricism has occasionally led to the adoption of part of it, but as its mode of action was not understood, or how it could possibly be of advantage, it awakened no interest in the profession, and consequently has died, and been revived, but generally by the charlatan.

At the commencement of this work, I stated that it was my intention to be practical. I trust that thus far I have

given evidence of it. Can anything be more practical than in attempting to elucidate the origin and nature of disease, showing in what way it may, on many occasions, be controlled, and by means which every one has at command?

I have no love for the mysterious. What I know I wish to communicate without reservation. I write for the benefit of others less informed than myself; and, therefore, I shall earnestly keep in mind their requirements and necessities. In the desire to respond to these I must, however, be allowed to pursue my own course. I am, or presume to be, the best judge of what is needed, and of the manner in which it should be conveyed.

The object of the foregoing remarks concerning pulmonary consumption has been threefold. *First*, to shew in what manner it originates; *secondly*, to trace the successive steps of morbid action; and *thirdly*, to deduce from the pathological researches practical and efficient measures of treatment.

1. According to the principles which are here only very briefly unfolded, phthisis does not arise from any particular weakness of the lungs, beyond what characterises the constitution generally. The form of disease which is induced in these organs indicates the prevailing condition of the functions of life, the nature of which is, *a peculiar delicacy of the nervous system, implying a want of nervous energy*. Hence the readiness with which it is depressed by various causes, as certain states of the atmosphere, mental emotions, and a reckless indulgence of the passions. The nervous centres to which allusion has been made, are the *first* to feel the prejudicial effects, *viz.*, a diminution of their normal energy. It is then that the nerves of the lungs are unable to maintain the vital actions of the air-cells displayed in the chemical changes of the blood. The points of the pulmonary tissues, where these are arrested, subsequently degenerate

into *miliary* tubercles. Consumption is, therefore, distinctly and emphatically a *nervous affection*, keeping in view the mode of its origin, and the causes of its subsequent aggravation.

2. The next step in the inquiry, to which attention was directed, was an effort to trace the causes which gradually led to the destruction of the lungs. The most influential of these was shewn to be the *nervous centres*. They lose the power of transmitting nervous energy from within, outwards, to the lungs, and not less so to all regions of the body; and, at last, their tissue becomes softened or otherwise affected, unequivocal evidence of the extent of their disturbance or disorganization.

From the commencement to the termination of phthisis, the lungs are usually the absorbing object of interest, and regarded as alone the seat of disease. This is a false and unfortunate misconception of its nature. It is as much an affection of the *nervous centres* as of these organs. In fact, it is in the former that it has its origin, and to their functional and structural changes is to be attributed the tubercular degeneration of the lungs.

Concerning the nature of pulmonary consumption, pathologists are very much divided in sentiment. One class, which includes Bayle, Lænnec, Chomel, and Louis, contend that it is an *asthenic* disease, a disease of debility, and not at all *inflammatory* in its character: another, at the head of which is Broussais,—and, with certain modifications of opinion, there are associated with him, Bouilland, Cruveilhier, Alison, and others,—argue, that tubercles, the presence of which constitutes phthisis, *are the product of inflammation*.

The disease is unquestionably one of *debility, of delicacy or weakness* of the nervous system. In the course of its progress it gives rise to effects regarded as evidence of inflammation, though this is certainly of an exceedingly

subdued kind; and, at times, it may appear to be preceded by this, but, with very few exceptions, the inflammation springs out of the existing *morbid condition of the lungs*, which, independently of it, would lead to the production of tubercles.

Pathologists, who are in favour of the hypothesis that tubercles are the consequence of inflammation, are very apt to discover this in structural changes, in which it cannot, with strict scientific accuracy, be said to be present. The term inflammation is somewhat abused in its application; and the abuse of it has arisen from this cause: it is imagined to explain readily and satisfactorily the successive stages of *disorganization* in different structures, losing sight of the important fact, that, to produce this effect, it is only necessary to *arrest* vital action: the increase of it is not an essential step in the morbid process.

Andral endeavours to prove that the formation of tubercles in the lungs, is, in a great proportion of cases, preceded by inflammation of the larynx, trachea, or bronchi; and the same views are entertained by others. Hence the terms frequently employed, *laryngeal* or *bronchial* phthisis. He admits, however, that this inflammation does not lead to the generation of tubercles, unless the individual be *predisposed* to the production of them,—a predisposition which he does not define.

There can be no question as to the common occurrence of inflammation in the organs mentioned; but the conclusion drawn from it, that it is any way the cause of the development of tubercles in the pulmonary tissues, is, in my opinion, fallacious. They do not stand to each other in the relation of cause and effect. In fact they both originate in the same general cause,—*in the exhaustion or weakness of the nervous centres*.

When such local inflammations occur, keeping in mind the constitutional character of the patient, the lungs are

never in a sound state. They may, or may not, at this time, be the seat of tubercles. If the latter indeed are not present, there are structural changes which incapacitate those organs for the correct performance of their functions, — changes which necessarily lead to the tubercular degeneration of them.

The animal system, at large, gives evidence of derangement, and is it to be supposed that the lungs are not affected?

The pathological condition of the nervous centres, in which phthisis originates, will differ in *degree* in the several regions of them;—a circumstance which will modify the manifestation of disease. Where the disturbance or weakness in the medulla oblongata or spinal cord is the greatest, the indications of this will be observed in the earlier or more severe derangement of those organs, *which especially depend on such region for their nervous power*. Hence the diversity of the phenomena which mark the commencement and progress of pulmonary consumption in different persons. In some, the first obvious symptoms are in connection with the lungs: in others, the larynx, trachea, or bronchi are apparently alone attacked. This, however, is not the case. The whole of these organs are more or less implicated in the general disorder of the animal system. Were it not so, some forms of phthisis, according to the distinctions of pathologists, would be comparatively easy to cure, being simply *local* affections. Unfortunately such is not their nature.

Such differences, in the manifestation of this disease, are owing to the structure and functions of the organs which suffer, and the influences to which they are habitually exposed. The mucous membrane of the respiratory and alimentary canal is peculiarly susceptible of disorganization, and clearly from the following causes: When the natural

relations between the *larynx* and *trachea*, and the *nervous centres*, are disturbed from a deficient supply of nervous power to the two former, the disordered vital actions which occur in the mucous membrane are further and greatly aggravated by the air which is breathed. They are unable to resist its stimulating and injurious effects; and consequently the transformation of these actions into a form expressing chronic inflammation which ordinarily ends in patches of ulceration.

The same *primary* vital derangement in many other parts of the body, exempt from such external influence, would in all probability have given rise to no disease beyond functional disturbance, which would readily have passed away on the improved state of the animal system.

The mucous membrane of the intestines, in cases of phthisis, is particularly liable to ulceration, in fact to a greater extent than that in connection with any other class of organs; and the inflammation which precedes it is of a *less* active kind than that which attacks the upper portions of the respiratory apparatus.

It is of practical importance to endeavour to elucidate this susceptibility of the intestines to ulceration, and the character of the inflammation to which they are subject. They possess a less amount of vital activity,—have in fact a less measure of vital properties,—than belong to the mucous membrane of the larynx and trachea, and are only periodically in vigorous exercise. The latter organs are constantly roused to excited operations, as in speech, the various acts which express mental emotions, and in the ordinary processes of respiration. They are likewise stimulated by muscular exertions of the body, as these cannot be effected without greatly increasing the activity of the breathing organs; and therefore, the necessity for an exceedingly liberal distribution of nervous power to them.

The greater the vital properties of a tissue or of any region of it, the more susceptible it is of acute inflammation, and this in its most *acute* form. Whatever the cause may be which occasions it, it is a *something* which disturbs existing vital actions, and the tendency of it is unquestionably to overcome or arrest them; and indeed such is the effect it produces previous to the manifestation of inflammation. The degree in which this occurs, is an exact representation of the vital endowments of the tissues or organ in which it is seated. The acuteness of the symptoms indicates the reaction of these endowments,—their resistance to the cause by which they are oppressed. They are efforts of nature to throw off disease, and in her difficulties she does this by creating another.

The intestines, as already remarked, have inherently less vital properties, and are less vigorously exercised, than the organic instruments of respiration. Comparative rest, or freedom from excited movements, is essential to the accomplishment of their functions. When the nervous centres, as in pulmonary consumption, fail to transmit to them nervous energy adequate to their necessities, their numerous capillaries or minute vessels are unequal to their duties, and become congested, the natural result of the diminution of nervous power. It is then that *re-action* ordinarily takes place in different portions of the mucous membrane,—reaction which is designated *inflammation*. This, however, is mild in degree, the existing vital processes being insufficient to develop its more aggravated conditions. They feebly combat the tendency to disorganization; and to this cause is to be attributed the extensive ulcerations of the intestines, which are evidence, not of the *violence* of the preceding inflammation, but of the *want of vital properties in the tissues to resist this disposition to structural changes*.

In the observations on the larynx and trachea, it was

stated that the affections from which they frequently suffer, as chronic inflammation and ulceration, are aggravated by the *air* which comes in contact with them. The mucous membrane of the intestines, under similar circumstances, will, also, be injuriously affected by their *contents*, occasionally imperfectly digested, and consequently irritating in their nature. Their passage, from above, downwards, over the delicate ulcerated mucous surface, to be ultimately evacuated, will materially aid the process of disorganization. They are among the influential causes contributing to the production and extension of it throughout the intestinal canal.

3. These physiological and pathological researches concerning the origin and nature of consumption, were indispensably necessary to the consideration of remedial measures. It is natural for patients to ask, On what grounds are these employed? What effect are they expected to produce? So far as this disease is concerned, such questions will be answered by the following exposition of my views.

The way in which the nervous centres, and the various organs of the body are associated, in the execution of those actions, the aggregate of which constitutes the phenomena of life, has been fully discussed. It has been shown in what manner the excited activity of these centres affects the viscera, and how the latter may be so influenced as to rouse the former to increased nervous operations to the advantage of the entire animal economy. With these facts before the mind, it is not difficult to point out the line of treatment which should be pursued in the attempt to arrest the progress of consumption.

Suppose a patient comes under the notice of the practitioner exhibiting the following symptoms:—embarrassed respiration, a short, but not troublesome cough, occasional pains in the chest, pulse somewhat quicker and weaker than

The greater the vital properties of a tissue or of any region of it, the more susceptible it is of acute inflammation, and this in its most *acute* form. Whatever the cause may be which occasions it, it is a *something* which disturbs existing vital actions, and the tendency of it is unquestionably to overcome or arrest them; and indeed such is the effect it produces previous to the manifestation of inflammation. The degree in which this occurs, is an exact representation of the vital endowments of the tissues or organ in which it is seated. The acuteness of the symptoms indicates the re-action of these endowments,—their resistance to the cause by which they are oppressed. They are efforts of nature to throw off disease, and in her difficulties she does this by creating another.

The intestines, as already remarked, have inherently less vital properties, and are less vigorously exercised, than the organic instruments of respiration. Comparative rest, or freedom from excited movements, is essential to the accomplishment of their functions. When the nervous centres, as in pulmonary consumption, fail to transmit to them nervous energy adequate to their necessities, their numerous capillaries or minute vessels are unequal to their duties, and become congested, the natural result of the diminution of nervous power. It is then that *re-action* ordinarily takes place in different portions of the mucous membrane,—re-action which is designated *inflammation*. This, however, is mild in degree, the existing vital processes being insufficient to develope its more aggravated conditions. They feebly combat the tendency to disorganization; and to this cause is to be attributed the extensive ulcerations of the intestines, which are evidence, not of the *violence* of the preceding inflammation, *but of the want of vital properties in the tissues to resist this disposition to structural changes*.

In the observations on the larynx and trachea, it was

stated that the affections from which they frequently suffer, as chronic inflammation and ulceration, are aggravated by the *air* which comes in contact with them. The mucous membrane of the intestines, under similar circumstances, will, also, be injuriously affected by their *contents*, occasionally imperfectly digested, and consequently irritating in their nature. Their passage, from above, downwards, over the delicate ulcerated mucous surface, to be ultimately evacuated, will materially aid the process of disorganization. They are among the influential causes contributing to the production and extension of it throughout the intestinal canal.

3. These physiological and pathological researches concerning the origin and nature of consumption, were indispensably necessary to the consideration of remedial measures. It is natural for patients to ask, On what grounds are these employed? What effect are they expected to produce? So far as this disease is concerned, such questions will be answered by the following exposition of my views.

The way in which the nervous centres, and the various organs of the body are associated, in the execution of those actions, the aggregate of which constitutes the phenomena of life, has been fully discussed. It has been shown in what manner the excited activity of these centres affects the viscera, and how the latter may be so influenced as to rouse the former to increased nervous operations to the advantage of the entire animal economy. With these facts before the mind, it is not difficult to point out the line of treatment which should be pursued in the attempt to arrest the progress of consumption.

Suppose a patient comes under the notice of the practitioner exhibiting the following symptoms:—embarrassed respiration, a short, but not troublesome cough, occasional pains in the chest, pulse somewhat quicker and weaker than

natural, and a sense of exhaustion experienced on slight bodily exertion: it is evident, taking into account the general aspect of the patient, and other circumstances, that the symptoms are those which characterise the first stage of consumption.

The important question arises, What should be the principles of treatment in the endeavour to correct these symptoms? To be successful there are two objects to be accomplished: *To impart additional nervous energy to the nerves of the lungs,—and to invigorate the circulation of these organs.* Every improvement in the latter depends on the salutary changes produced in the former.

Whatever may be the views of the pathologist concerning the state of the lungs in incipient phthisis, these are the two objects to the attainment of which medical treatment should be directed. When inflammatory action exists, it is, of course, to be treated by appropriate medicinal agents. The stage of consumption, however, which is here considered, rarely displays inflammation in a marked degree.

To influence beneficially the pulmonary tissues we must excite the nervous *centres* to increased action. This may be done most efficiently by friction along the spine, and to the whole of the abdominal surface. In acting directly upon the former, a stronger current of nervous power will inevitably be transmitted to the nerves of the lungs: and in acting upon the latter,—the abdominal surface,—the nervous centres will be further stimulated and strengthened, thereby acquiring physiological conditions which enable them to furnish this nervous power in greater abundance.

Independently of the good which friction is calculated to confer directly upon the lungs, it produces corresponding effects throughout the body. Derangement of the abdominal viscera *always* co-exists with incipient pulmonary consumption; and as this progresses, their functional distur-

bance passes into structural changes aggravating the disease of other organs.

It will not be doubted, that in proportion as the animal system is improved, gains tone and strength, it is better able to correct the tendency to tubercular degeneration of the lungs, and to protect these, when it exists, from its further encroachments. When it is not possible to effect a perfect cure, much may be done to alleviate, occasionally to prolong human existence to a protracted period. We should labour in hope, and leave the result to speak for itself. To test the efficacy of friction it must be perseveringly employed for many weeks, and in an *efficient* manner: a less time will not bring out its full advantages. It has, however, a claim to attention, stronger than that which arises from the physiological and pathological researches to which it has given rise: it has been extensively used by me, and with gratifying success, though it has seldom been carried out as it ought to be. Here in fact is a difficulty. Persons who do not understand the importance of this remedial measure, and cannot be made to feel it, attend rather to the form than the spirit of it. It is not in this way that good is to be effected under extraordinary difficulties.

It is interesting to observe, that within the last few years, cases of consumption are stated to have been cured by rubbing the *whole* surface of the body with oil. The beneficial results are to be attributed far less to the oil, than the *friction* which accompanied it. By exciting the skin to greatly increased vital actions, *the nervous centres are proportionately stimulated*, and, as a consequence, are in a condition to convey to all organs a more liberal current of nervous energy. The cutaneous surface offers myriads of nervous channels, through which the central nervous instruments may be powerfully influenced.

§ 5. *The Application of Friction in Scrofulous Affections.*

Scrofula and phthisis are considered by the most recent medical authorities as identical diseases. They both give rise, certainly, to the production of tubercles differing in no degree in character. The former affection, manifested in early life by *external* indications, as the enlargement of glands, may be cured, leaving no traces of its existence; and yet after many years, the individual who has been so affected, ultimately falls a sacrifice to pulmonary consumption. Cases of this kind are of frequent occurrence, and have come under my own observation. Further, in many of those who die of scrofulous disease, tubercles are found in the lungs and in various other organs, shewing, it is contended, the identity of the two maladies. While admitting the full force of these facts, and of others which are adduced in support of the same views, there are, in my opinion, differences, which necessitate, and for practical purposes, a nosological distinction between them.

In the following pages satisfactory reasons will be given why scrofula is selected to exhibit the advantages of friction. There is scarcely any other state of the body in which this confers greater benefits, and clearly from the nature of the constitutional derangement which exists. The affection is exceedingly common among the young of both sexes, occurring at a time of life when the vital powers generally may be influenced in an extraordinary degree by judicious and active remedial measures. Hence the selection of it for investigation.

Objections will perhaps be brought against the introduction of these physiological and pathological researches into a treatise of this kind. I am unwilling to believe this: if, however, such be the case, my reply is, in justification of the course pursued, that my anxiety is to impart sound scientific

knowledge, and in a way that, while it enlightens the mind concerning the nature of a particular disease, it brings fully into view the state of the animal system out of which it arises. In fact it does much more : by explaining the natural and disordered conditions of this system, information of no mean value is conveyed in reference not only to a particular malady, but to many forms of disturbed vital action. Will not such knowledge be acceptable to those who wish to learn something beyond the names of diseases? For those who have no such desire I do not write. Others have written for them.

The proper place for these physiological and pathological inquiries is in this stage of the work, and the completion of them according to the plan contemplated, will materially facilitate the treatment of matters that will afterwards come under notice. The subject of friction affords, not an infelicitous occasion for investigations of this description. It indeed necessitates them; for while studying to display its advantages, as a remedial agent, it compels me to enter upon researches to show what are the laws and principles which regulate and govern the vital functions of the body. To the accomplishment of this my best efforts are devoted; and if I fail in receiving from the public that encouragement necessary to cheer and lighten the undertaking, I shall conclude that I have misunderstood their wants. The error, however, will, in my opinion, be on the right side. It will be on the side of endeavouring to communicate substantial and practical instruction.

It may further be remarked, that these inquiries embrace conditions of the animal economy, essential to a knowledge of three-fourths of the important diseases to which humanity is subject, a sufficient apology, were one required, for the ample discussion of them here.

Scrofula and consumption have been particularly studied

by me for a long period, and the results of my investigations are before the world in several publications.

The first step in this inquiry is to determine, on the one hand, the nature of the scrofulous constitution ; and, on the other, that of phthisis. Each, according to my observations, has its distinctive characters,—conditions of the animal system which enable the physiologist to draw a line between them, if not scrupulously exact, nevertheless generally correct.

The constitution to which the term scrofulous may be applied, from its predisposition to glandular disease, shows itself in unmistakeable forms in early childhood, through the successive stages of bodily development, and distinctly throughout adult life. In the child belonging to the middle classes of society, it is often seen in a somewhat gross condition of the frame, in large, round limbs, the extreme softness of the flesh, and the smoothness of the skin, which is pale and bloodless in appearance; the countenance is at times, though only rarely, florid; the face is full, the lips thick, the jaws are large, and the flesh, which is chiefly fat, is thick and pendulous beneath the chin; the abdomen is prominent, and, on striking it gently with the hand, is found more or less tympanitic, that is, distended with air: the appetite is rather voracious, and the bowels are seldom constipated; on the contrary, they have a tendency to be moved more frequently than in children of greater stamina of constitution, and the evacuations are generally loose and light in colour; the urine, if allowed to stand, not unfrequently deposits a sediment. The young of this constitution learn to walk late, and are some time before they acquire perfect command of their limbs. They are heavy and ungainly in their movements. On slight derangement of the digestive organs, to which they are exceedingly subject, the eye-lids become inflamed, and the matter which they secrete

glues the eye-lashes together during sleep; there is likewise a discharge from the nose, the tongue becomes foul, the breath is disagreeable, and the face has a puffy or swollen aspect. With the aggravation of the constitutional disorder, the glands of the neck enlarge, or disease shows itself in some of the joints, as the knee, the toes or fingers, and occasionally in the hip.

Scrofula, as an actual existing affection, must not be confounded with the scrofulous constitution. The former may be induced, independently of a strumous diathesis, by circumstances extremely unfavourable to health; and the latter, from circumstances of an opposite character, may have this disposition to the manifestation of such disease corrected, as will be explained in the sequel.

The scrofulous constitution, as described above, is only one type of it; it is, however, not very uncommon in the classes of society alluded to, in which the child, in too many instances, is pampered or over-fed, increasing the bulk of the body at the expense of its quality, which, with certain reservations, is in the inverse ratio of the other.

Another type of this constitution is shown in the small, weak, and ill-formed limbs, the body generally showing a want of symmetry, a proper development of its several parts. It is spare of flesh, but this is remarkably soft and flaccid, the skin smooth, and of a white, waxy, or transparent appearance. The abdomen is large, and contrasts strongly with the rest of the frame. Such conditions of the animal system prevail to a great extent among the lower classes of society, in which the child is often indifferently and irregularly fed, and in every respect neglected. In such cases the line between the scrofulous constitution, and the disease to which it is prone to give rise, is extremely fine.

Children, with these bodily endowments, and injuriously acted upon by external influences, generally die before the

fifth year, not of any particular affection, but of various or complicated maladies, all indicating the thorough want of vital power.

In the young of both sexes approaching puberty, the indications of the scrofulous constitution are unequivocally exhibited in the soft or flabby character of the flesh, in the excess of fat and the deficiency of muscle, and in the evident want of vital tone or energy. On the occurrence of disturbance of the digestive organs, or of other disorders, the uvula, naturally flaccid, is elongated, the tonsils are greatly enlarged, and also the glands of the neck. The appetite is less gross than at an earlier period of life, the abdomen is still unduly prominent, the fæcal evacuations are copious, and almost invariably soft in consistency, the urine is usually pale, and abundant in quantity. In the female, menstruation is established late, and when established, the secretion is exceedingly variable in amount, irregular in its periods, and liable to frequent interruptions from slight derangement of the animal system. And when this occurs, and continues for months, the skin assumes a dirty white or ash-like colour, the countenance has a bloated or swollen appearance, the flesh little, if at all, diminished, is particularly soft or wanting in firmness; the individual becomes extremely languid, has neither disposition nor power to exert herself. Among other symptoms which present themselves, are the quickened and small pulse, palpitation of the heart, and short or difficult breathing. In the more vigorous constitution, under similar circumstances, the affections which arise, if at all the same in character, are much less rapidly developed, are milder in degree, and are far more readily cured.

In the adult scrofulous constitution, the body, if the influences which act upon it are favourable, as fresh air, active out-of-door exercise, substantial and stimulating diet, undergoes considerable modifications. It acquires the condi-

tions, if not of robust, of a fair measure of health, but never unless it has the advantage of such influences.

Such is a brief sketch of the scrofulous constitution drawn from personal observation. It now remains to describe the consumptive constitution as it generally offers itself to our notice.

In early childhood the body is ordinarily well, though delicately formed. It differs, in several important respects, from the organic conditions distinguishing the two classes of the scrofulous constitution. It has not the ample adipose development of the one, nor has it the extreme leanness of the other. In a great proportion of instances, it is far more muscular than either, and occasionally in a striking degree. As a rule, however, the flesh is deficient in firmness, the skin is smooth, and usually pale. In young persons having this constitution, there are no outward indications of scrofula on the occurrence of derangement of the animal system: the eye-lids are not the seat of chronic inflammation, nor do the glands of the neck enlarge. The constitution is not regarded as scrofulous, which is always easy of detection in those who come under such designation, not only from the affections which accurately shew it, but from the prevailing character of the vital endowments.

In children of the consumptive constitution, the appetite is mostly nice or fastidious, and seldom gross; nor are the digestive organs so liable to disorders, as the respiratory. It may further be observed, that of those who die under five years of age, a much greater proportion will be found to have suffered from scrofula in its external and internal forms, than from pulmonary consumption, viewing this, according to received opinions, as a disease of the lungs, and as *making its first attack upon them*;—conclusions which would certainly be wide of the truth.

Children of the consumptive diathesis have no particular

Prominence of the abdomen; nor is the body wanting in symmetry. It is, indeed, frequently finely and exquisitely moulded; and when such die, how common is the allusion to their beauty! When the young, of both sexes, reach puberty, they still stand out, in their bodily characteristics, in contrast with those of the scrofulous constitution. They are mostly slight in figure, delicate in appearance, but not unusually active and energetic in their movements. In those of the scrofulous constitution, these movements are heavy, slow, or feeble.

In the examination of adults, with a consumptive tendency, we discover some whose general appearance would scarcely lead us to suspect the existence of a predisposition of this kind. Their frames are somewhat vigorously developed, the flesh rather firm than otherwise, and moderately abundant in quantity. The countenance is florid, conveying, and naturally, an impression of robust health, and such in fact is the case. The number, however, displaying these constitutional indications, is small.

In the foregoing observations, the object has been to portray faithfully the differences between the scrofulous and the consumptive constitution; thus far they have mainly been confined to the outward form,—obvious bodily conditions. On further investigations, directed to ascertain the state of the internal organs, of the blood and its circulation, and of the nervous system, other discrepancies will be pointed out; but before doing this, I shall advert to the views of high medical authorities on the subjects which are here brought under consideration.

It is remarked by Dr Copland, who contends for the *identity* of scrofula and tubercles, the latter implying phthisis: that “the great question, the solution of which ought to put an end to all discussion, is this,—Is the morbid structure of external scrofula identical in its characters

with that of internal scrofula, or tuberculosis? or, in other words, Is the external manifestation of scrofula by enlarged lymphatic glands the same in its minute structure as the internal manifestation of it by *tubercular* deposit?"* He decides both questions in the affirmative, and endeavours to establish the correctness of his opinion.

With deference to this great writer, the important practical question is not the *identity* of the *matter* occurring in diseased glands and tubercles, which will at once be admitted ; but *the character of the constitution which, at two different periods of life, is the occasion of the production of it, and in different classes of organs.* He allows that these distinctions exist, viz., as to the time of life at which the two diseases, scrofula and consumption, ordinarily shew themselves, and the organs to which they have a preference.

According to his train of reasoning, it might be argued that acute inflammation is precisely the *same*, whether it attacks the sanguineous or the lymphatic temperament, and suggests the same active measures of treatment, *because it is inflammation in this form.* He certainly would not recommend identity of practice. And why? In consequence of the difference in the tone and energy of the constitutions,—in all that contributes to the manifestation of the phenomena of life. Then why should the attention be exclusively directed to this identity of scrofulous and tuberculous *matter*, as if it settled all disputes *concerning the states of the animal system in which it originates?* In itself it is of no practical value. It settles nothing, nor does it prove anything, beyond shewing the disposition of the various tissues of the body, under certain circumstances, to pass from one stage of disorganization into another, ultimately displaying analogous morbid conditions.

* Dr Copland, *opus cit.*, vol. iii. p. 752.

If it be important to determine, which will not be doubted, the differences of individual temperaments, in order to guide and regulate the treatment of all forms of aggravated diseases, as well as to attain clear ideas as to their nature : is it not equally so in respect of individual constitutions, which, in one large class, give rise, in early life, to evident scrofulous affections ; and in another, scarcely less extensive, to tubercles in the lungs in advanced youth and mature manhood, unaccompanied by glandular enlargements and other external structural changes ? The identity of the *matter*, consequent on disorganization, does not prove the identity of the constitutions. On the contrary, its appearance at very different periods of human existence, and primarily in a different order of organs, unequivocally establishes a discrepancy of the vital powers. This is, however, denied by Dr Copland and other distinguished writers : on the other hand, it is supported by Scharlan, Schönlein, Dr Evans, Dr Chapman, and Mr Phillips. Dr Copland observes, in the examination of scrofula and phthisis, that “ the same *diathesis, constitution, and states of the blood and secretions*, and a similar grade of vital endowments, of vital cohesion, and of vital resistance, *characterise both diseased manifestations*.”*

According to the description which has been given in the preceding pages of the scrofulous and the consumptive constitution, the opinions of this admirable writer are not borne out by facts. The “ *diathesis, constitution, and states of the blood and secretions* ” are not the same in both ; otherwise the character of disease, the locality which it primarily attacks, and the period of its occurrence, would be the same, which is far from being the case. Surely a decided difference in effects implies a corresponding difference in the

* *Opus cit.*, vol. iii. p. 752.

causes, and what this is it is now my business to endeavour to explain.

The first, and most important branch of the inquiry, is the condition of the *nervous system* in the two constitutions. In the consumptive, it is more active, or, in other words, possesses a greater amount of the nervous principle, and this is seen in more lively or vigorous bodily movements, in the healthier aspect of the countenance, though usually pale, and in the more natural excretions, as of the intestines and of the kidneys: the blood is somewhat less abundant, but has *higher* vital properties. These are consequences which necessarily flow from the existing state of the nervous system. Had it not superior endowments, as compared with those characterising the scrofulous constitution, the great mortality which occurs in both sexes, would not be, as is the case, after the mature development of the body, but at a much earlier period of life. The predisposition to phthisis is often unsuspected, and, as it were, lies dormant until the individual has attained his fortieth or forty-fifth year. And why? From possessing those vital powers which are here described.

The temperament of the consumptive constitution is, in a large proportion of instances, of a *mixed* kind,—*nervous* and *lymphatic*, meaning, by the former, a certain wiriness or vigour of the body.* The scrofulous constitution is the lowest and the worst form of the lymphatic temperament.

It is asserted by Dr Copland, that “the states of *the blood and secretions*” are the same in the two constitutions. This is not the fact. In the consumptive, the digestive organs more perfectly elaborate the food they receive than the same organs in the scrofulous. Hence the blood which

* The great pathologist, Lænnec, who died of pulmonary consumption, was remarkable for this character of constitution, and was proud of occasions which enabled him to display his strength. He was a lean and diminutive man, nevertheless possessed of considerable muscular power.

is produced is superior in its quality; and it is partly on this account that, on the occurrence of phthisis, external glandular affections are only occasionally observed.

The pathological principles on which I have attempted to trace the origin of pulmonary consumption, are decidedly in favour of the physiological views establishing a distinction between the scrofulous and the consumptive constitution, and the soundness of it will be corroborated by facts which will subsequently be adduced.

These lengthened observations concerning the two kinds of constitutions, were necessary from various considerations. The same medical and dietetic treatment of them would not be equally successful in both, a circumstance quite sufficient in itself to give a value to investigations showing in what consists the difference of their vital conditions.

I shall now confine my remarks to scrofula and the scrofulous constitution. The great defect of this is *a want of nervous energy*; which is distinctly seen in the softness of the flesh, the pallid and smooth skin, the poverty of the blood, its deficiency of red globules, and the presence of an undue amount of albumen in place of fibrin, which enters into the composition of muscle. As already stated, the appetite is mostly gross, but the abdominal viscera being imperfectly supplied with nervous power, the digestive processes are weakly performed, and this is the cause of the prevailing properties of the blood. When this is conveyed to the lungs to be oxygenated, these organs, being equally deficient in nervous energy, the chemical changes effected in it are less extensive, or complete, than what take place in persons of more vigorous bodily endowments.

It must be kept in mind, that whatever be the *natural* state of the nervous system, the character of it is expressed in the degree of activity possessed by *every* organ of the animal economy. If the nervous centres, whence the ner-

vous agent is derived, furnish this in an abundant current, the fact is evident in the tone or energy distinguishing vital action throughout the body. If, on the other hand, the current is feeble, the functions of life correspondingly display the fact. The exceptions to this physiological principle are indeed few, if indeed any can be considered to exist. If they at all occur, it is in the activity of the mental powers. These, in the scrofulous constitution, are occasionally, though very rarely, precocious and particularly active. From my own observations, I am disposed to infer that this activity of the cerebral organs, manifested in a precocity of mind, is to a very great extent the *cause of the development of the scrofulous constitution*. It exhausts the nervous power, affording an outlet for it to the injury of the system at large. Of this parents, in general, are little aware. They are delighted, and naturally, with the quickness and ability of their offspring: they liberally indulge the taste and aptitude for knowledge, and the melancholy result is, the death of the youth who gave no mean promise of extraordinary excellence. Many remarkable instances of this kind might be mentioned.

In childhood and youth, the nervous energy, when legitimately employed, is expended in nourishing and developing equally every part of the animal system; and the future well-being of the individual depends on allowing nature to pursue her ordinary course. If any class of organs, whether mental, digestive, or sensual, take upon themselves to do more than their share, the balance of the functions of life is disturbed, and disease in some form is the consequence.

From long and patient observation of external scrofulous affections, particularly the enlargement of the glands of the neck, as well as disease of the more important joints, I am thoroughly convinced that the exciting or immediate cause of them, is the *derangement* of the digestive organs, as the

stomach, the liver, and the intestines. The abdomen will always be found more than usually prominent and tympanitic; the fecal evacuations more than ordinarily loose, and deficient in bile; the urine pale, and, if allowed to stand, will generally deposit a sediment. The aspect of the whole body, at this time, shows in a striking degree the poverty of the blood, arising from the want of more vigorous action on the part of the digestive apparatus; and the great object of medical treatment should be to improve the vital conditions of it. In proportion as this is effected, the glands gradually decrease in size; or if the seat of open sores, these rapidly assume a healthier appearance.

An able writer has asked, "Is this state of the gland determined by the circulation within it of blood which has undergone change, or is it independent of the blood? Does the blood fit the organ to receive the deposit, or does the organ fit itself? This is an important question, but of very difficult solution. Important, too, with reference to treatment; because if the action set up were purely local, means might be taken to change it, and render it unfit for the deposit. If the action depend only upon a general contamination of the blood, how comes it that all the lymphatic glands are not equally affected? It is notorious that they are not."* The questions which are here asked are important, and in my opinion not difficult satisfactorily to answer.

There are three causes which conjointly occasion the enlargement of the glands of the neck, to which this writer alludes: *first*, their low vital tone from deficient nervous energy; *secondly*, the impure state of the blood; *thirdly*, the influence which the movements of the jaws exert upon these glands.

These glands, in the scrofulous constitution, are naturally

* Mr Phillips, *vide* Dr Copland, *opus cit.*, vol. iii. p. 755.

inactive, and become more so on the occurrence of derangement of the digestive functions, the continuance and aggravation of which still further reduce the powers of the nervous system; and the debilitating process is carried on, until, at length, the glands, in common with every organ of the body, reach their *lowest* state of vital energy: they become unequal to the secretion of their respective juices. While thus nervously depressed, another cause comes into operation, and in fact from the first has been prejudicially acting upon them, *viz.*, the deteriorated properties of the blood, which fails to excite the glands to their normal action, and ultimately becomes stagnant in them. We have now in these organs, *greatly diminished nervous power and blood at rest*: two conditions adequate to account for the rapid development of disease. The glands enlarge, are hard and slightly painful to the touch. They go on increasing in size, and continue for some time hard. As the process of disorganization advances purulent matter is formed, the result of interrupted vital action, and if not absorbed by the treatment employed, but let alone, it opens a way for itself externally and is discharged.

The writer last quoted asks, "Does the blood fit the organ to receive the deposit, or does the organ fit itself?" According to the explanation here given, they are both, from the changes they undergo, contemporary causes. The organ, naturally weak in nervous power, has this power further lessened by the disturbance of the digestive functions; and while in this state, the blood, proportionately disordered, augments the existing local derangement; and in consequence the development of glandular disease. Inflammation is not first induced. This is entirely absent. Extreme vital debility, both in regard to nervous energy and the properties of the blood, is the incipient step towards the process of disorganization. The chronic or exceedingly weak in-

flammation which follows, is the *result* of the condition of the organ described, and arises from the conflict of the organic elements of the glands, struggling, as it were, to preserve their integrity.

It is further asked, "If the action depend only upon a general contamination of the blood, how comes it that all the lymphatic glands are not equally affected? It is notorious that they are not." The writer here alludes to the frequency with which the glands of the neck are enlarged and extensively diseased, while lymphatic glands in other parts of the body are apparently unaffected. This seemingly partial manifestation of vital disturbance has not been explained by pathologists.

On the occurrence of evident scrofulous symptoms in the glands of the neck, every lymphatic gland in the animal system is diseased. It is an inevitable effect of the existing state of the vital powers generally. In other regions of the body, these organs are not, however, so liable to become the seat of morbid action, in the same degree, as those of the neck, but this does not arise from a difference in their *nervous* or *circulatory* conditions. There are local causes affecting the one, and not the other, which have been altogether overlooked by writers.

The glands of the neck, as the parotid and sub-maxillary, are acted upon by every *movement* of the jaws. In their healthy state, it is this which excites and facilitates the flow of their secretions into the mouth: in their diseased state, it is this which *irritates* them, aggravating the existing morbid actions, and is mainly the cause of the inflammation induced in them, in consequence of which the process of disorganization is materially hastened.

These are the local circumstances which injuriously affect the glands of the neck, from which glands, in other situations, are exempt.

Having investigated, as far as it is necessary on this occasion, scrofula and the scrofulous constitution, it now becomes my duty to show, in what manner the former may, in numerous instances, be prevented, cured or relieved; and the latter greatly improved, independently of medicinal substances. The consideration of these, in their application to disease, will fall under notice in a subsequent part of this work. It must not be supposed that I underrate their value. They have their use, and an important one; but this is no reason why other matters which exert a powerful preventive or curative influence should not be studied, discussed, and brought prominently into view. My anxiety, as already remarked, is to convey sound practical knowledge, and in a form that will be intelligible to all: knowledge which is founded on personal observation and experience.

Scrofula has been introduced here for special inquiry from two considerations: its great prevalence among the young of both sexes; and the advantage of friction in the treatment of it, and to this I wish to direct particular attention.

When a child exhibits the symptoms which have been described, as enlargement of the glands of the neck, or scrofulous affections of the joints, the object should be to *create* a healthier and more vigorous tone of the animal system generally. Local vital improvement in such constitutions depends on this. No remedy will afford substantial benefit that does not contribute to this end; and the good effected will be temporary and unsatisfactory unless the entire of the functions of life be strengthened. We should not be satisfied with healing a sore, reducing a glandular swelling, or removing any other affection that may exist, but should endeavour to produce such a change in the animal economy, as may prevent the recurrence of these diseases, and this may, to a great extent, be efficiently done by friction to the abdomen.

It has already been stated, and the fact will not be questioned by those who have deeply investigated scrofula, that when this occurs, whatever may be the locality of the body in which it appears, *the digestive organs are invariably disordered*, and their derangement, from *depressing* the nervous system, and *deteriorating* the properties of the blood, is the cause of the development of glandular and other affections. A variety of symptoms establish the correctness of this opinion, as the state of the tongue, the character of the alvine evacuations and of the urine, the large and tympanitic condition of the abdomen, and the more or less offensiveness of the breath. Friction employed, as previously recommended, morning and night for a quarter of an hour, never fails to excite the abdominal viscera to greatly improved vital action. The accumulated flatus is expelled, the belly becomes less prominent and much more natural to the touch; the fæcal evacuations assume a deeper colour, and are more consistent; and the urine is likewise deepened in colour and clearer.

With these *progressive* changes, which are apparent in the course of a week or ten days, the external swellings or sores are obviously beneficially influenced. The former gradually subside, and the latter show a disposition to heal. If they are, however, of long standing, friction should be steadily carried out while other remedial measures are employed; and even when these are discontinued, as no longer necessary, it may be used for a considerable period, a few times a-week, with very great advantage. It will always do good and tend to maintain the child or youth in health. It is in the scrofulous constitution that it is imperatively required from the naturally low tone of vital energy which prevails; and there are no other means that will, *singly*, confer anything like the same amount of benefit upon the animal frame.

In the female, at puberty, characterized by these bodily endowments, the sexual organs are usually tardy in the manifestation of their functions, under which circumstances, friction to the abdomen and along the spine will be found an invaluable remedy, awakening nature to the exercise of important duties; and when these are irregularly or imperfectly performed correcting what is wrong.

It is not my business here to discuss the medical and dietetic treatment of scrofula and of the scrofulous constitution. Such matters belong to a later part of the work.

Before leaving the subject of the scrofulous constitution, it is necessary to advert to the decided changes which it frequently undergoes after the attainment of manhood, indicating a greatly improved condition of the vital powers, and from causes which are not equally beneficial in their influence on the consumptive constitution. *I allude to generous and stimulating modes of living.* Many persons, who had in early life scrofula in a somewhat aggravated form, and not from the effects of impure air or insufficiency of food, on reaching manhood, acquire habits of social conviviality, and, as a consequence, indulge more or less in stimulants, and in the liberal gratification of the appetite in other respects. The effects of these habits on the animal economy are often very remarkable, the latter being modified in all its vital conditions. The adipose and muscular tissues are considerably developed, and the flesh is not wanting in firmness; the expression of the countenance is that of health, and it is evident that digestion, assimilation, and other processes, if not vigorously, are at least actively performed. These extensive vital changes are almost entirely due to the *stimulus* which generous living imparts to the body and without which they would not have taken place. Out-of-door exercise would not alone have produced them: conjoined with the practice of taking stimulants in moderation,

such results are exceedingly common. The two combined make up in some degree for the natural deficiency of vital energy; and they do this by exciting the nervous centres to more vigorous operations the grateful agency of which is communicated to every fibre of the animal system.

There is one fact, not uninteresting to state, bearing intimately on this subject; and that is, the large amount of stimulants which persons of the scrofulous constitution can ordinarily take without becoming inebriated. One half or a third of the quantity, would, in individuals of the nervous or sanguine temperament, cause intoxication. The explanation of this is evident. The ability, as a rule, to indulge in this manner, is an exact measure or expression of the low tone of nervous energy existing. Before intoxication can arise, the whole of the nervous system has to be brought into an unnatural state of excitement; and *cæteris paribus*, the readiness with which this is induced, is according to the *amount* of nervous power present in the animal system, judging of this *amount* from the degree of activity displayed by the functions of life generally; and further, taking into account, how far its influence will be modified by differences in the *size* of the human body. The latter circumstance is of importance in the endeavour to attain just views on the subject under discussion. If the *quantity* of nervous energy which exists is small, and the mass of flesh with which it is associated is somewhat large or considerable, stimulants, in persons so constituted, will be borne with much greater ease, than in those far more abundantly possessed of nervous energy.

I have been led to make these remarks, in consequence of high modern authorities contending for the identity of the scrofulous and the consumptive constitution. While my observations, which have been extensive, have taught me, that the former will not only bear, within certain limits,

stimulants, unaccompanied by obvious excitement, but in fact, in moderation, is greatly benefited by them: they have further convinced me, that the consumptive constitution will not support, in anything like the same degree, the same active agents, and were they taken they would not conduce to the same salutary results. Hence the unquestionable difference between the scrofulous and the consumptive constitution.

In these remarks on the effects of stimulants upon the animal system, the influence of *habit* is in a great measure left out of consideration, though not entirely; nor is it necessary that it should be excluded in the endeavour to attain just views on the subject. Its influence is unquestionably great in modifying the natural endowments of the human constitution; but it no more makes different constitutions alike, than nature has made them alike.

Habit, in respect of stimulants, varies in its effects, according to the character of the living materials with which it is associated and on which it acts. It does not assimilate these to one standard, nor give them a capacity in common to bear these agents. The original differences which distinguish individuals are not materially disturbed by it.

Persons who daily indulge in stimulants, and somewhat freely, acquire the ability to support an amount, unaccompanied by inebriation, greatly beyond what they possessed at the commencement of their career. If, however, they persist in the baneful practice, a period, at length, arrives, when a very limited quantity occasions intoxication. The causes of this are twofold: the *first*, is the thoroughly weakened, disordered, and undermined state of the body,—a state in which the balance of the vital powers, if such can be supposed to exist, is readily destroyed.

The *second* cause is, that when stimulants are repeated, day after day, part of what had previously been taken, is

yet in the system, has not been thrown off, so that a slight addition to it is sufficient to produce marked results.

§ 6. *The Application of Friction in Cases of Constipation.*

The subject of constipation has strong and peculiar claims to consideration. In numerous instances it can scarcely be regarded as coming under the designation of disease; nor indeed can it be considered as the result of disease in any part of the animal system. It is a state of the body which frequently co-exists with ordinary and excellent health. Many persons constitutionally suffer from it, and are habitually taking medicine to remove it; which in my opinion is great folly, and attended with injurious effects as I shall subsequently endeavour to show.

It is laid down by high medical authorities, that whenever the bowels are confined beyond twenty-four hours, without the desire of evacuation, the retention of the fæces is to be regarded "as an approach to a *morbid* state, and therefore requiring medical aid."*

This doctrine is altogether at variance with my own observation and personal experience; and were it acted upon, employing aperient remedies to correct the supposed evil, the repetition of these would be prejudicial to the organs directly influenced, and to the functions of life generally. There is no point connected with medical practice that has received greater consideration from me, than the condition of the bowels in health and disease; and I have long been thoroughly convinced, that, in both states of the body, the cases are extremely few, in which it is either wise or necessary to interfere with them by means of active agents; and more especially in the greater proportion of *acute* affections,

* Dr Copland, *opus cit.*, vol. i. p. 405.

in which practitioners of the prevailing school, seldom, if ever, fail, in some form, to use them. The impression on their minds is, that they cannot do wrong *in keeping the bowels open*. If they understood the physiology of these viscera, their relations to the animal system at large, and the nature of the disturbance induced in them on the occurrence of *acute* disease in other organs, they would be sensible that the doctrine they entertain is not only fallacious, but when put in practice is often fraught with grave consequences.

Constipation is a frequent accompaniment of the most vigorous development of the animal frame, lean, wiry and muscular, agile and energetic in its movements, and possessed of very considerable enduring qualities. The temperament of such a constitution is the *muscular* and *nervous*, and is less liable to disease than any other combination of bodily endowments. Persons so formed, and with such vital characteristics, are particularly subject to constipation. They will pass days without the bowels being solicited by nature to act ; and as a rule, if let alone, they will not be moved above twice a-week, and on many occasions not even to this extent ; and during this time the individuals are altogether free from pain and from every symptom that indicates derangement. They have no headache, no thirst, no dryness of the mouth, no heat of skin, nor is the appetite at all affected. Instances of this kind are far from rare.

With respect to the functions of the bowels mankind generally have strange notions. They expect regularity of action scarcely less precise than that of clock-work. They do not take into account the variableness of the circumstances by which these viscera and the entire animal system are influenced,—as the quantity and quality of the food which is taken, the states of the atmosphere, the mental and bodily exertion which is undergone ; all which are causes

greatly modifying the condition of the vital powers generally, and as a consequence those of the alimentary canal.

Nature, as exhibited in the animal economy, is one of constant change. She adheres to no steady rule, though many of her deviations from an imagined standard of health are unobserved ; and of those which attract attention, as *irregularity* in the action of the bowels, were she, in a great proportion of cases let alone, she would correct herself. When she seems to hesitate in her operations, and, in fact, for the time being is unequal to them, she is displaying wisdom which is very imperfectly apprehended. She is gradually gathering her strength, concentrating her resources to effect what is desired and necessary to the well-being of the body ; and while thus labouring towards a salutary end we misinterpret her difficulties, and fail to appreciate her efforts to right herself. We indeed presume to assist her with active remedies when she wants no assistance, but wishes to be allowed to take her own time and pursue her own course. Our interference knocks her down, and she has to begin again the tedious process of restoration.

It has always appeared to me extraordinary and somewhat inexplicable, why people generally are so nervously anxious about their bowels, have so little confidence in the ability of them to execute their special offices. They do not show the same want of confidence in respect of the *kidneys* and the *bladder*, which, in the exercise of their functions, are scarcely *less* variable, and why this difference of feeling should exist I am at a loss to conjecture. The one class of organs is just as capable of performing its duties as the other. Nature in her endowments has been impartial to both ; has given to each those powers adequate to the accomplishment of the purposes for which they were designed.

Nevertheless mankind are not of this opinion, and by

their conduct they are constantly accusing nature of her imperfections, of doing her business badly ; when in fact her imperfections and shortcomings lie at the door of those who interfere with and disturb her processes. Had they the same opportunity of acting upon the kidneys and bladder, as they have upon the intestines ; or were the means of doing so as obvious and as much at their command, they would become equally nervous about *their* actions. They would sit down to reflect how it was, that the urine to-day was much smaller in quantity or more copious, and paler or much more highly coloured, than it was yesterday.

One of the valuable secrets of health, is to have *implicit confidence in nature*. People have no idea of the amount of mischief they do by what they consider *helping* her. They teach her to depend on them in place of depending upon herself, and all sorts of dependence are bad. A large proportion of the irregularities displayed in the functions of the bowels are attributable to improper diet, understanding by this the wide class of ingesta, and the very common practice of *aiding* these organs to get quit of their contents. The greater part of the *irregularities* so produced, would be efficiently remedied were nature allowed to have her own way. The singularity which is shown in this *interference* is this : it very seldom arises from any pain or uneasiness experienced in the bowels beyond perhaps slight flatulence : there is no particular symptom present which leads the individual to suppose that something is seriously wrong. What is wrong, under these circumstances, is in the *mind* and not in the intestines. The mind is led into a train of reflection on this interruption of vital action, or rather the *irregularity* in its manifestation ; and reflection goes on, until, at length, it seems quite clear that nature is waiting for and requires help, and then it is given in the form of pills, draughts, or mixtures. Nice and appropriate things

for the delicate mucous membrane of the digestive apparatus extending from the mouth to the anus! If persons knew the nature of this membrane, its constitution, and the functions it performs, they would treat it very differently from what they do. It is neither cast-metal nor cast-steel, and it might be either one or the other judging from the rude influences to which it is occasionally subjected.

The mucous membrane is wonderfully rich in capillaries or minute blood-vessels, and is peculiarly sensitive of matters which come in contact with it. It is throughout a *secreting* organ, eliminates fluids necessary for the process of digestion. In the stomach it furnishes the gastric juice: in the small intestines it has two important functions: it not only *secretes*, but offers a large surface for the *absorption* of that which is the result of digestion, and which has to be conveyed to the lungs to be converted into blood. This portion of the mucous membrane has its countless little mouths ceaselessly occupied in drinking in nutritious substances.

From this brief description of the alimentary canal, is it not evident that great caution should be exercised in interfering with the vital processes of which it is the seat? When these are disordered, the object should be so to treat the digestive organs as to *coax* them by mild measures into a healthier state, and this it is by no means difficult to effect. The ordinary mode of correcting constipation is *always* baneful in its influence. It irritates the mucous membrane, and deranges for a considerable time its natural actions. How can it possibly be otherwise, if we consider the delicacy of its structure and the importance of its functions?

The practice of drugging the bowels, in health and disease, has, in numberless instances, laid the foundation of incurable affections, and has sent its legions to an untimely grave. No other kind of treatment has so much to answer for; and yet, whatever be the character of the malady

which is present, the profession invariably direct their attention to the bowels, conceiving that they cannot do wrong in taking care they are *kept open*. They revere the old maxim, "The head cool, the feet warm, and the bowels *open*." This might be regarded as sound wisdom when physiology was unknown as a science; but now that the cultivation of it has thrown abundant light on the causes and nature of disease, a servile respect for such a maxim betrays the ignorance of the age which gave it birth.

The perfect quiescence of the bowels, in many urgent forms of disease, is essentially necessary to recovery, and cases in illustration of the fact will hereafter be given. When nature has reached her lowest point of vitality, struggling, and all but in vain, to carry on her operations, the consideration then should be to economize her strength, and how is this to be done *unless we prevent the expenditure of her powers*? To purge, or to force the bowels to act, under such circumstances, is to make a demand for vital energy on the *whole* of the animal system. And what is the consequence? Nature already enfeebled sinks from exhaustion. It is sometimes ludicrous, though deeply painful, to hear from friends how patients were treated before they died. "They were bled, blistered, and regularly purged: all that *art* could do was done. The practice was very active, but they died." The activity of the practice is, in the opinion of such persons, its great excellence. They have no idea of *science* doing anything, *by doing nothing*, or what would be considered as nothing according to their conceptions. They are excusable, but not those who pursue such modes of treatment.

I have stated that individuals possessing a wiry and muscular frame are often subject to constipation. Writers have supposed this to arise from the absorption of the more fluid contents of the bowels, to a greater extent than occurs in

others who do not suffer from this affection. This may in part be the case; but other causes, which have been overlooked by the pathologist, contribute to this effect. In such constitutions the secretions of the abdominal viscera, of which the fæces are largely composed, are never abundant; on the contrary they are small in quantity, as compared with those which are poured out in persons who have less muscle and a greater development of fat; and further, there is, in the latter, a *laxity* of fibre which materially facilitates the action of the bowels. The want of more copious secretions in the spare muscular body, is the chief cause of constipation; and this deficiency of the secretions, expressive of the natural constitution of the abdominal viscera, is further augmented by other circumstances. The vital capital with which individuals, of different temperaments, are endowed, offers great discrepancies in its distribution and the manner in which it is expended. In the luxurious and sensual *gourmand*, his vital capital is to a great extent in the viscera of the abdomen. It is needed here, and it is here in extraordinary affluence. He is rarely troubled with constipation unless his habits in other respects contribute to it. In him the secretions are abundant, and, as a matter of course, the bowels are regular in their action.

In the thin muscular frame we have a very different state of things. The vital capital of those who come under this designation is not concentrated in the abdominal viscera, but is liberally distributed to other parts of the animal system. Persons of this development are generally mentally and bodily exceedingly active. Hence in them nature has large *outlets* for the escape of nervous power, and clearly in directions very different in character from what distinguish the easy and gross sensualist. The issues which are thus afforded externally for the escape of this power and of the vivifying elements of the blood, leave a less portion

of both to stimulate the organs of the abdomen, the effect of which stimulus, were it great, would be exhibited in the production of copious secretions; and as a consequence, in the supposed regular peristaltic action of the bowels. Facts may be mentioned which illustrate and strengthen the physiological views here brought under notice. Severe or active muscular exertion, which, in the free liver, would aid the action of these organs and lead to faecal evacuations, gives rise, in the spare and muscular body to a different result. It ordinarily aggravates the natural tendency to constipation; and the evacuations, when they occur, are smaller in quantity and of firmer consistency, than what is usual. The reason is evident. The undue muscular exercise, by its expenditure of vital capital, has diminished the amount that would otherwise have been appropriated to the internal organs.

I am here treating of constipation, which is habitual to many persons through life, and is not an infrequent occurrence in many others of widely different constitutions; and in either case it can only very occasionally be considered as amounting to disease. In the latter it is temporary functional derangement, and not often of any great moment. My advice to both is, not to attempt to correct this state of the animal system by active means,—means which are ordinarily prescribed and almost universally employed. None of these are harmless. They are the cause of serious structural changes in important internal organs, in a way, and of a character, of which the profession, and the non-professional public, are little aware. There is a rule which should be followed, and from its inestimable value is worthy of being called a *golden rule*: to people who are prone, and who believe that it is an imperative duty, to aid nature with drugs in her trifling embarrassments and deviations from her usual course, I would say, and most emphatically, and

the advice is founded on extensive observation and personal experience; *if the bowels do not trouble them, let them be equally gracious and trouble not the bowels*. By trouble, as manifested by these organs, is to be understood, uneasy or uncomfortable sensations, as head-ache, the dry or parched tongue, the hot skin, or some feelings which are clearly referable to the interrupted activity of these viscera. The presence of flatulence, to which it usually gives rise, is not a sufficient cause for interference in the manner stated; for this is frequently an indication that nature is making efforts to accomplish the desired object, and, if let alone, will seldom be unsuccessful.

It is imagined that constipation is the cause of serious constitutional disorders, as "cutaneous eruptions, various dyspeptic symptoms, chlorosis, hysteria and chorea."* This is scarcely an accurate representation. It is ascribing to constipation what certainly does not belong to it: and to allege that these diseases are traceable to it is anything but philosophical. Constipation is *one* of the effects of the derangement of the animal system to which these affections mainly owe their origin. It is a symptom, in common with them, and they are only very occasionally cured by remedies prescribed to correct it. Admitting that there are some evils which spring out of it; are there none, and much graver, consequent on the coarse and active measures employed to remove it? The frequent use of purgatives is one of the influential causes of the different forms of indigestion. They weaken and disturb the natural functions of the stomach, liver, and intestines; and the repetition of them incapacitates these organs for the performance of their duties. In numerous cases the disorder induced passes into structural changes embittering human existence. They

* Dr Copland, *opus cit.*, vol. i. p. 408-9.

excite inflammation, and the continuance of this, in a chronic state, not only diminishes the normal vital powers of these viscera during the rest of life, but leads to the disorganization of the intestinal tube, as a thickening of its coats, a narrowing of its capacity, ulceration, and a scirrhus or cancerous condition of it and of adjacent structures. Is this strange, when we reflect on the delicacy of the organs thus influenced, and keep in mind the manner in which the alimentary canal is affected every time that active medicinal agents come in contact with it, forcing it to do that to which it is unequal, and being satisfied with nothing less than the manifestation of its energetic operations? What should we think of compelling a man to exert his muscular strength when he has not the ability? The lash might urge him to make an effort, and this might be considerable; but what would be the condition of the muscular system afterwards? It would require rest, and in the ratio of its previous excitement. This case, and that of the bowels, tortured by purgatives, is perfectly analogous. Further, would any of us deem it wise to apply to the *cutaneous* surface, which is protected by the *cuticle*, strong medicinal substances rousing it to powerful vital actions? We should smile at such an idea; and yet there is no hesitation in treating in a similar way the mucous membrane of the intestines, which has no cuticle to ward off or mitigate the severe prejudicial agencies exciting it to unusual functional activity.

The injurious effects of purgatives are not confined to the organs which may be regarded as directly acted upon by them. The kidneys, the bladder, and the generative system, are banefully influenced: they are weakened and variously disordered, and the practice pursued is not infrequently the cause of the important diseases of which they become the seat. These are matters worthy of thoughtful consideration. Constipation may be cured by much milder and more

rational methods, than those ordinarily adopted,—methods which, while effecting this particular object, benefit the whole of the functions of life imparting to these the conditions of health.

Irregularity in the action of the bowels is common to children, but in three-fourths of the instances in which this occurs, it is the consequence of improper food. Sensible and judicious parents, as exhibited in the treatment of children, are somewhat limited in number. They imagine that what the dear child likes, and what would be suitable for an adult, cannot hurt it. Hence the indulgence of its appetite and a long train of evils. The animal system of the young is adapted only to the simplest of the articles of diet, as milk, in its various forms and conditions, and puddings, in which milk enters more or less as a constituent part: gross feeding on pies, tarts, rich dishes, and meat, seldom fails to disorder the body. The digestive organs receive what they cannot well dispose of, and the result is *irritation* of the mucous membrane of the intestinal canal, one of the first symptoms of which is ordinarily *constipation*. The natural functions of the abdominal viscera are disturbed, their secretions are interrupted, and as evidence of it the urine is small in quantity, and deposits a sediment; the tongue is furred, the skin is dry or hot, and the child is restless and fretful. These phenomena are indications that nature rebels, and against what? Against being called upon to do what she cannot possibly accomplish. She makes something like a dead stand, *and in this lies her preservation*. This stand is the commencement of the struggle to put things right; and if parents knew the proper mode of assisting nature, for indeed it is no tmuch at this time that she wants, restoration to health would be an easy achievement, preventing what are usually the effects of such derangement, head affections, inflammation of important

organs, gastric and other fevers. I have no hesitation in asserting, that by extremely mild and simple means a tendency to such diseases may be easily corrected. They ought not, as a rule, to occur. When they do the fault is either in neglecting the early symptoms, or so drugging the system, that an affection which ought to be cured in a few days, becomes one of long duration and not unaccompanied with anxiety as to the result. I speak on this subject as a practical man, and not as a theorist. My daily avocations make me the former; and my ardent search after truth gives me some claim to the latter character, but I hope in its best and philosophical sense.

If it be injudicious, and the fact cannot reasonably be doubted, to *irritate*, by means of alteratives and purgatives, the mucous membrane of the intestines in the adult, how much stronger is the objection to their use in the young! In the latter, the same organs have a sensitiveness to impressions, and a delicacy of structure which exist at no other period of life. They are fresh from the hands of nature, and their freshness, implying a peculiar state of the vital powers, should teach us to respect them in the application of remedial measures. They should be treated with a delicacy of consideration equal to the delicacy of their organization; which would certainly exclude the practice pursued by the prevailing school of medicine.

Delicate females, of sedentary habits, are particularly liable to constipation. In such it is a common affection, arising chiefly from the want of out-of-door exercise, and occasionally from their mode of living. The abdominal viscera are not sufficiently excited by fresh air and bodily activity, to be enabled to furnish secretions in amount necessary to sound digestion, and, therefore, the bowels are torpid.

This class of persons are constantly having recourse to

aperient remedies of some kind, and *one* of the frequent evils consequent on the habit, is the derangement of the digestive organs, an inability on the part of the stomach to digest *substantial* food, as is shown by the pain or uneasiness which it occasions, the flatulence and rumbling of the bowels to which it gives rise, and the general symptoms which constitute the different forms of dyspepsia.

I have thus far discussed constipation occurring to individuals in health, or in such a state of the body as is not supposed to require medical aid. It is now my duty to show in what manner, independently of drugs, it may readily be relieved and ultimately cured, and greatly to the advantage of the entire of the powers of life.

In regard to those who constitutionally suffer from constipation, possessing a muscular and wiry frame, and vigorous health, they have no occasion to be anxious concerning the action of the bowels at short and regular intervals. Let them keep in mind 'the golden rule' laid down. The supposed necessity or advantage of a daily evacuation is perfect nonsense. Nature varies her conduct, in different constitutions, and wisely; and she is the best judge of what is right, and will rarely fail to do it if not fretted and teased by our interference.

If, however, from symptoms which are present, it is thought desirable that the bowels should be induced to act, the following method of treatment will facilitate the attainment of this object: a coarse towel moistened with cold water, rather than thoroughly wet, should be rubbed over the whole of the abdomen, every morning, for ten minutes; and afterwards a dry coarse towel should be applied in the same manner for about half this period. The friction will be much more efficient if done in the recumbent posture, as lying in or upon the bed, for example; as in this case, the abdominal parietes or surface is *relaxed*, not tightened, as

it is in the erect position of the body; and consequently a much greater impression can be made upon the abdominal viscera, and particularly on the large *arteries* and *veins*, through the excited action of which the circulation, locally and generally, will be invigorated. If olive oil, with the hand, in place of the towels, be preferred, it may be used.

It is here important to observe, that invalids, when capable of applying friction to themselves, had better, nevertheless, allow it to be done by others, as the results will be much more satisfactory. Persons, in health, or comparative health, may do it for themselves; but even they, when it is possible, would derive greater benefit from its being energetically done by others.

I have alluded to constipation, as frequently occurring in children. If the bowels are moved, the evacuations are small in quantity, and in other respects not what they ought to be. The child, so affected, is languid and fretful, the tongue is dry, and there is a desire for water, and scarcely at all for food: the face has a pasty, unhealthy, aspect. The question is, What should be done in this case, independently of drugs, rendering these on many occasions altogether unnecessary? The child should have as much cold water as it is disposed to drink, and should not be pressed to take food. It will ask for this when it wants it, and then it should be of the simplest kind: meat should be withheld for several days, if the child from its years is indulged with it at other times. Parents are usually very uneasy when children refuse nourishment, which according to their ideas is necessary at this time to support the strength of the body. Their anxiety has no just grounds. What do we see in the lower animals, as the horse and the dog, when suffering from similar circumstances? They drink water and will not take food. Nature in them is unerring, and their conduct should, in such matters, be a guide to us. The profession would

have their income materially diminished were it not for the injudiciousness of parents.

In the foregoing observations I have indicated the way in which the sick child should be treated dietetically: I have now to allude to friction to the abdomen. This should be steadily and gently rubbed with olive oil, morning and night, for quarter of an hour, and continued until vigorous health be re-established. A decided improvement in the symptoms will be apparent in two or three days. The bowels will begin to act with greater regularity, and the evacuations will show a healthier condition; the thirst will be greatly lessened, the tongue will be cleaner, and the countenance will display a manifest alteration in its general appearance, it will have become clearer and more animated in its expression.

It must not be supposed that I am drawing on my imagination for the description of these salutary changes. The description is the result of extensive observation, and I pledge my professional credit for the accuracy of it. The physiological action of friction to the abdomen has already been discussed at length, and the views which it led me to develope, in reference to the functions of life generally, will, on candid and careful investigation, be found amply sufficient to account for the good which it effects.

Delicate females, whose habits are more or less sedentary, have been mentioned as peculiarly subject to constipation. In such it is most important to *economize* the strength of the constitution, and to do this it is necessary that the digestive organs shall not be weakened or disordered by the use of aperients or purgatives. They invariably do mischief, though, at the time, this may not be perceived or even be suspected. They seriously disturb the functions of the abdominal viscera, and are the occasion of a long train of dyspeptic symptoms, as irregularity in the action of the bowels, a tendency to flatulency, a fastidiousness of the

appetite, an inability of the stomach to digest with ease nutritious and substantial food, and the occurrence of pain in some of the abdominal regions. The truth of these facts will not be doubted by those who have had extensive opportunities of studying the effects of such remedies on the animal system. They are the natural consequences of them.

Persons of the constitution which is under consideration, and who take little active bodily exercise, have the abdominal viscera *always in a state of congestion*, as compared with those in individuals of vigorous health; and it is this state of the circulation, and a corresponding derangement of nervous matter, that account for the symptoms which arise requiring medical aid to correct them. It is this pathological condition of the organs in question, that explains the extraordinary advantages of friction to the abdomen in such cases. It removes this congestion, and gives to the blood a distribution better calculated to respond to the demands of the body. The circulation is invigorated generally, and the blood is proportionally improved in its qualities. The results which follow are obvious: the secretions of the abdominal viscera become more copious and natural, the digestive process is unembarrassed, *and the bowels are regular in their action*. It is on these grounds,—the thorough conviction that these changes will take place,—that friction is urgently recommended. It will, if efficiently employed, do away with the necessity of aperients and purgatives, effecting not only the object for which they are prescribed,—that is, compelling the bowels to act,—but will awaken and strengthen the functions of the animal system at large, leaving, in fact, as a consequence of its influence, the attributes of health.

Often have I been pained in the course of my professional career to observe, in numerous instances, various forms of disease which have clearly been induced by injudicious

treatment, as the employment of purgatives and^d active alteratives, and foremost among the latter, though likewise included in the former, are the different preparations of mercury. The strength of the body is undermined by them, and those who might otherwise have been in robust health, drag on a miserable existence invalids for life.

§ 7. *The Consideration of Constipation in connection with Acute Inflammation of the Lungs.*

Constipation, coexisting with acute diseases, next falls under consideration, and deserves the attention of the profession. The impression among the latter in cases of *acute inflammation* is, that it is of the highest possible importance the bowels should be kept regularly open. On this point there is no difference of opinion. To question the soundness of the doctrine will, therefore, to such persons, appear bold and strange. What, they will exclaim, “not purge when acute disease is present?” They insist on this, whether the disease be in the brain, the lungs, the liver, or the larger joints, and in typhus and typhoid maladies. On these grounds it is an imperative duty to attempt to show that they are in error; and to establish this my arguments will be based on physiological and pathological principles.

Constipation is a prevailing characteristic symptom in all *acute* inflammatory affections of important organs, and is the necessary result of the disturbance of the vital powers generally. To illustrate and enforce the views which it is my intention to lay down on this subject, it is a matter of perfect indifference what organ, suffering from this form of disease, be selected. We will suppose the lungs to be the seat of it. The influence they will exert in producing a *torpid state* of the bowels will be considered under the following heads:—

1. The inflammation by which they are attacked constitutes them *centres* of excited vital activity, in a degree far surpassing what distinguishes their normal functions. While contemplating these organs in this condition, the mind must not lose sight of another fact equally worthy of notice, viz., *the excited action of the great nervous centres* in structural and functional relation to the lungs. Unless the two be kept steadily in view, as organs reciprocally acting upon each other; and further, the one lavishly *expending* the nervous power which it is the office of the other to supply, it will not only be impossible to explain the phenomena of inflammation, but what concerns us on the present occasion, the *modus operandi* of this in giving rise to constipation. It is to this that our attention has principally to be confined.

It would be trite to remark, after what has already been stated on the subject, that every degree of activity displayed by the lungs, is evidence of a corresponding degree of excitement in the nervous centres. Hence, when the former are the seat of acute inflammation, which is the highest state of *activity* of which they are susceptible, it is clear that the nervous power of these centres, which should be distributed somewhat equally to all regions of the body, is drawn in an undue current *in the direction of the lungs, and is proportionately expended by them*: they are large channels for the escape of it, a circumstance which has not hitherto been appreciated by the pathologist. If the nervous energy be wasted, which cannot for a moment be doubted, in contributing to the inflammatory action of these organs, an important conclusion may legitimately be deduced, viz., *that a diminished quantity will be left to be transmitted to the abdominal viscera*, as well as to the animal system generally. Such in fact is the case. It cannot possibly be otherwise.

2. Having shown the nature of the disturbance in the distribution of nervous energy consequent on the presence of acute inflammation, it is necessary to trace the effects of it on the secretory organs, as the stomach, liver, pancreas, kidneys, and intestines. These several viscera are, at this time, *insufficiently* supplied with nervous power. What is the consequence? The patient has great thirst, and has no desire for anything but water; the liver has almost entirely ceased to secrete bile, and the kidneys, urine: this is exceedingly small in quantity and deposits a thick sediment: the smaller intestines have nothing to do. The stomach conveys to them no chyme, the product of digestion; and as they are likewise deficient in nervous power, they are literally at rest. This being more or less the condition of the whole of the abdominal viscera, it is evident that scarcely any of the secretions, which mainly constitute the bulk of the alvine evacuations, will be poured into the intestines; and, therefore, the *accumulation* of these cannot be urged as a reason for the employment of purgatives.

3. Another consideration, bearing on the subject of constipation, in connection with acute inflammation of the lungs, is the greatly altered qualities of the blood. It possesses no longer the properties essential to the production of the various secretions, an additional circumstance accounting for the diminution or interruption of them.

Such is the state of the abdominal viscera coexisting with acute inflammation of the lungs. From this very brief exposition of the disease, it is clear that constipation is an inevitable result of it; and in what then consists the necessity or advantage in endeavouring to remove it by purgatives? There is no daily *accumulation* of fæces requiring the employment of them; and, therefore, their use cannot be urged on this ground; and what other can be adduced? None that will prove their beneficial influence; but cogent

reasons may be given to show that, if enforced, they are calculated to retard and prevent recovery.

In compelling the bowels to act, on the supposition of accumulated *feces*, or of matters imagined to be prejudicial if retained, the strength of the body, already greatly weakened, is further reduced, and in a way that does not relieve the lungs in any of the stages of inflammation; but on the contrary tends to aggravate their diseased condition. The practice pursued rouses into activity organs, which, for the well-being of the animal system, should, under such circumstances, be left in comparative repose. It is forcing them to secrete their respective fluids when these are not wanted, and can be of no positive use. The efforts which they make to perform their functions are creating so many outlets for the escape of vital power, which is, or will be needed, to contribute to the restoration of health. Did the issue of it, in such directions, act beneficially on the lungs, the measures which promote this should of course be employed, but they have a very different effect. By depressing the powers of life they cause the acute stage of inflammation to pass into that of *congestion*, a much more formidable condition and far more difficult to cure.

When inflammation of the lungs is fatal it is from the congestion induced in them, destroying their oxygenating and breathing capacity. Another objection against the employment of purgatives, in this disease, is, that they will unquestionably interfere with the action of remedies prescribed to act upon these organs. We can only do one thing at a time to do it well. The medicinal agents given to control the inflammation of the lungs will operate very inefficiently, if others are used with the intention of affecting the bowels. The homœopath never commits blunders of this kind. He concentrates his attention on the urgent and important symptoms, knowing that when these are corrected,

the subordinate ones,—effects springing out of the others,—will disappear as a matter of course, and experience proves the soundness of his views. This is certainly not the plan pursued by the allopath. He errs by doing too much, by torturing or disordering too many organs at the same time; thereby weakening the influence he is anxious to exert in a *particular* direction. He too frequently knocks down nature by the severity of his treatment *in place of enlisting her into his service*, which can be done only by mild means, but adequate to the subjection of her when she is wrong, and the case admits of cure.

The illustrious poet Goëthe, in his remarks on nervous matter, has justly and beautifully observed, that a gentle power or force acting upon it is capable of producing great results.

Die gelinde Kraft ist gross.

The profession generally have yet to learn the marvellous efficiency of this small force in the treatment of all forms of disease; nor will the knowledge of it break upon their understandings until they condescend to learn what nature is, as displayed in the organization and functions of the animal system in health.

§ 8. *The Consideration of Constipation as occurring in Acute Rheumatism.*

There are few affections of the body in which the bowels are more torpid than in this disease,—a disease which is exceedingly common, and the treatment which is ordinarily employed in the cure of it, is not only injudicious, and based on incorrect pathological principles, but is one great cause of the chronic forms which it assumes which are among the most troublesome and painful of maladies

The pathology or nature of acute rheumatism may unhesitatingly be asserted to be not understood. While writers have faithfully and elaborately described its symptoms, they

have not shown in what it consists; and hence the remedies which have been recommended and used, have not been, in the same precise stage of the disease, less numerous than the symptoms themselves.

Some of the earlier writers considered rheumatism as arising from a morbid matter existing in the circulation; others have viewed it as inflammation of a class of vessels which admit only the *colourless* parts of the blood: by Cullen and Bichat it was regarded as an inflammatory state of the *muscular* fibres, implicating, according to the latter authority, more particularly the fibrous tissues of the joints and the aponeurotic expansions. By others it is stated to be a *specific* form of inflammation seated in the fibrous, or serous, or fibro-serous membranes. Dr Todd, one of the latest authorities on the subject, looks upon this disease as depending on the presence of an undue quantity of *lactic acid*.

The nature of acute rheumatism is *primarily* NERVOUS, and must necessarily be so, whatever be the causes in which it originates. The chief of these are atmospheric influences, derangement of the digestive organs, exhaustion or impoverishment of the nervous system which may be variously induced. It is in vain to endeavour to determine the particular tissue which it attacks, and unimportant were it possible. The nerves of the joints or muscles are *first* affected, and as they are associated with different organic structures, the disease will not be located in any one to the exclusion of others.

It is only on the nervous theory of rheumatism that the phenomena to which it gives rise can be satisfactorily explained, among which is obstinate constipation, the complete elucidation of which is of considerable interest and of great practical value; nor indeed can full justice be done to it without bringing prominently into view the real nature of acute rheumatism, or the conditions of the animal system by which it is characterized.

This disease presents itself in two very distinct forms, the discrimination of which is important in the treatment of it according to the prevailing system of medicine, or indeed whatever system may be followed. The *first* form is that which occurs in an individual in robust health from exposure to cold or certain conditions of the atmosphere: the *second* is that which arises from the exhaustion of the nervous system consequent on extreme bodily labour or sensual indulgence. When the affection is to be traced to disorder of the digestive organs, which is not infrequent in the lower classes of society, the symptoms differ in several essential respects from those which distinguish the two forms which it is my intention on this occasion to examine.

When acute rheumatism attacks a person, in health, considerable fever usually *precedes* the manifestation of the disease in the muscles and larger joints, or if this be present it is slight in degree. Severe and depressing pain quickly fixes itself on these organs, and the joints rapidly begin to swell, becoming exquisitely sensitive to the touch. They are then the seat of what is called *acute inflammation*. The pulse is full, strong and accelerated; the mouth is dry and clammy, and thirst is always experienced. The urine is scanty, and during the course of the malady deposits a copious sediment. The bowels are invariably confined; excessive heat of skin and profuse perspiration alternate. The latter, however, brings little or no relief to the patient.

Such are the leading symptoms of acute rheumatism, and it now remains to explain the pathological conditions in which they originate; or in other words, the state of the animal system which gives rise to them.

In the form of disease which is under consideration the nervous system is affected in two ways: the *extremities* of the nerves distributed to the muscles and joints are prejudicially influenced by atmospheric agencies; and at the

same time the great nervous centres are depressed. The re-action between the two, abnormal in its degree, is the cause of the development of fever, and of the swollen and painful joints. The latter become the predominant *foci* of vital activity: *to them the nervous energy is drawn in extraordinary abundance from all regions of the nervous system.* The concentration of it in these external organs accounts for their marvellous susceptibility of impressions, and the disordered vital processes which they manifest. It also throws a clear and distinct light on the whole of the phenomena which characterize this disease. It will not be questioned that there exists, at any one moment, only a given quantity of nervous energy in the body, or the ability to produce such amount whatever this may be. In health, every organ has its due share of it, and in disease, the natural distribution of it is disturbed. If we suppose, that, in the ordinary state of the animal system, the nervous principle is represented by 100, and that half of this is appropriated to the viscera, and the other half to the muscles, joints, and the cutaneous surface; it is evident, that on the occurrence of a malady like acute rheumatism, when there is scarcely a large joint that is not more or less implicated in this derangement of the vital powers, the nervous agent will assume very different conditions. Of the 100, 75 per cent. may reasonably be conceived to be located *externally*, leaving only 25 to carry on the functions of the abdominal viscera. That the nervous principle is susceptible of accumulation and dispersion, and is constantly offering to our notice the phenomenon of *quitting* one part of the body and taking possession of another, are truths which it would be absurd to call in question.*

* See the author's works, "The Philosophy of Animated Nature" and "Practical Views on Nervous Diseases."

The physiological principles which are here laid down will satisfactorily elucidate the state of the abdominal viscera in acute rheumatism, as well as the rest of its symptoms, and in a way that will clearly indicate not only the method of treatment which should be pursued, but the injurious character of that which is generally employed.

The urine, as already stated, is extremely small in quantity, and the copious sediment it deposits resembles brick-dust. This is what might be calculated upon under existing circumstances. The functions of none of the viscera are active, on the contrary they are comparatively in repose,—at a dead stand. No food is received to stimulate the stomach, and the liver pours scarcely any bile into the duodenum,—the first of the small bowels. From these combined causes, and the want of nervous power, *the intestines are exceedingly torpid*. Philosophically and not figuratively speaking, the strong current of life,—the nervous power,—is *outside* and not within the body. It is transmitted to and accumulated in the larger joints and muscles; and sound practical treatment consists in re-establishing by mild measures the natural balance of the nervous system.

The fever in acute rheumatism is usually accompanied by profuse and clammy sweats, affording little, if any, relief to the patient. The cause of this fever, and of the *copious perspiration* which succeeds it, generally towards morning, has not been explained. Mason Good remarks, but with singular inaccuracy, and evidently from a very imperfect knowledge of the disease, that it is by the latter “evacuation alone we can succeed in effecting a cure.”* The fever originates in the following manner. Independently of the nervous excitement which exists from the state of the joints and muscles, there is a certain *amount* of useless

* *The Study of Medicine*, vol. ii. p. 654. 3rd Edit.

matters created by vital action throughout the animal system, whatever be the conditions of it, which must be thrown off in some form for the continued preservation of life. They are not evacuated at this time through the intestines and the kidneys. The former are perfectly at rest, and the latter, from the character of their secretion, are clearly labouring, but inefficiently, to perform their office, as is shown by the abundant sediment, resembling brick-dust. These superfluous matters are, therefore, in *circulation*; and as they cannot be expelled through their usual channels, they go to the *surface* of the body,—an emunctory on a large scale; and they accumulate there until, at length, *nature is forced to relieve herself*, and she does this by copious clammy sweats. That these do not materially mitigate the acute suffering of the patient is not extraordinary. They are simply throwing off accumulated matters which have no other means of escape, and the riddance of them affords no substantial benefit to the joints and muscles, the nerves of these organs being little, if at all, affected by the cutaneous evacuation.

Such is the state of the animal system attacked by acute rheumatism. Of what use can purgatives or aperients be in a case of this kind, though they rarely fail to be employed? They do immense mischief, aggravating the disease, and rendering it, in fact, much more tedious and difficult to cure. They cannot create a healthy action in the viscera, and unless they do this, or contribute in some degree to the re-establishment of their natural functions, they are necessarily fraught with great evil. By *irritating* the nerves of the alimentary canal with which they come in contact, and the *nervous centres*, exhausting still further the latter, the nerves of the joints and muscles will inevitably be prejudicially influenced by them, and such is acknowledged to be the case by the more intelligent of the profession.

The other form of acute rheumatism, viz., that which is consequent on induced debility of the body, differs greatly in its symptoms from the one which has been discussed. The joints and muscles are not less severely affected, though the former do not swell to the same extent, nor do they exhibit outwardly the same intense inflammation; the urine, though small in quantity, does not deposit the same thick sediment; the pulse is frequent, but not full and strong; the fever and the perspirations are extremely slight, as compared with the same symptoms in the form of disease which has been considered: and with the most judicious treatment the malady is far more difficult to cure. The causes of the differences between the two may be thus explained.

In the *first* form, the animal system, previous to the seizure, was in robust or good health, and is suddenly prostrated. It is attacked with the vital powers in affluence. Hence the disease is in no degree to be ascribed to nervous weakness; *but to a disturbance in the distribution of the nervous energy*. There is a sufficiency of this in the body, and what remedial measures have to effect is to re-establish its natural conditions.

In the *second* form of acute rheumatism the state of things is very different. The nervous principle present is small in amount; it has been gradually expended in place of being wisely husbanded. The disease originates in the debility of the body; consequently there are two formidable difficulties with which medical treatment has to deal: an insufficient stock of nervous energy, *and the disordered distribution of this*, which is largely accumulated in the affected joints and muscles. In such cases the constipation is obstinate in the extreme; and to endeavour to correct it by purgatives would almost to a certainty be fatal. The great consideration of the practitioner, apart from the employment of medicinal agents, should be to economize the limited vital power which

exists. I will select one, out of many cases which have fallen under my notice, in order to illustrate the force of these observations.

I was requested to see a gentleman ill of acute rheumatism. He was about thirty-three years of age, slight in figure, and naturally delicate: he had been remarkably careful in his diet, certainly living in a way that did not border on what was generous. He had applied himself closely to a sedentary occupation, and had been in the habit, most unwisely, considering the character of his constitution and the circumstances which are here stated, of using the shower-bath every morning. After his best efforts to invigorate himself he got married. It was three months after this important event that he fell ill. There was scarcely a joint or muscle of the body that was not affected. The joints were only slightly swollen, but were most acutely painful, and the muscular system generally was peculiarly sensitive to the touch. Seeing the nature of the constitution before me, and knowing the habits of the individual, and the influences which had been in operation tending to debilitate, it was evident to my mind, that how felicitous soever I might be in the selection of homœopathic remedies, an all-important object was to *economize* the strength of the patient, who could take nothing beyond water, a little tea, and occasionally gruel. The economy consisted *in leaving the bowels in undisturbed repose*. The acuteness of the symptoms was slowly, but satisfactorily subdued,—the daily improvement was manifest. Though the amelioration had been steadily progressive, the bowels for *twelve days* had given no indication on the part of nature of a disposition to act, nor had aperients of any kind been employed. I had some difficulty with his wife on this subject, she having a settled conviction, while fully sensible of the beneficial results of the treatment, that they would never be moved

again. I had now reached a point beyond which I was not permitted to go. At her urgent request she was allowed to give a dose of castor oil, with the understanding that the alvine dejection was to be reserved for my inspection. I had particular reasons for this. The following morning, on inquiring concerning the action of the oil, I was shown the evacuation, which in quantity and appearance was like that of an *infant*. The wife observed that she was never more astonished in her life. Her impression was, that the *quantity* would bear some proportion to the length of time the bowels had been perfectly inactive; and being aware that this was her feeling, which was not very unnatural, she was requested to reserve the motion. This case, which is by no means peculiar, on the contrary it is one of a large class differing only in the severity of the symptoms, abounds in valuable practical instruction.

It is clear that the simple, and the trifling amount of food which the patient had taken during the twelve days, had been digested, thoroughly elaborated, and conveyed into the animal system. Though extremely small in quantity it was more than equal to the *waste* of the body; and consequently it was daily adding something to the blood in circulation, and proportionally improving its properties,—the two ends which had to be attained to secure the recovery of the patient. This would not have been possible had purgatives or aperients been given, or in fact any remedies that acted powerfully upon the functions of life.

There is no fallacy more general, and none more injurious, than the opinion entertained by the profession, that in severe diseases it is of the greatest importance to keep the bowels open although little or no food may be taken. They do not for a moment consider the almost complete cessation of vital action in them, inevitably resulting from the acute affection in some *other* region of the body; nor do they

perceive the great advantage there is, under such circumstances, in allowing the alimentary canal to remain at rest, to be exempt from their interference. They imagine that matters accumulate which it is most desirable to remove, and generally daily. This is an assumption entirely destitute of truth. Nature, at this time, is doing extra work in some other part of the animal system; has *withdrawn* the vital power necessary to excite the secretions of the abdominal viscera, and to produce those matters which it is supposed should be evacuated.

I have stated that the nervous principle or agent is capable of being accumulated and dispersed, and this is shown in a striking and interesting manner in acute rheumatism. Metastasis, which is disease suddenly changing its locality, is not unfrequent in a few well-known affections.* It is very common in acute rheumatism. The knee-joint perhaps to-day is much swollen and excessively painful: to-morrow it will be nearly its natural size, and may be handled with

* An interesting case of this kind came under my notice a few years ago. A gentleman, nearly sixty years of age, of regular habits, and whose health was moderately good, had for many months suffered from a general swelling of the *instep* of the right foot the nature of which was not very evident. There was no appearance of inflammation, nor was there much pain, except in walking. The flesh was pale and soft, and the pressure of the finger left a momentary impression, as in the early stage of oedema or dropsy. After a few weeks' treatment the swelling suddenly disappeared, but the next day it was found on the inner part of the right thigh. In this situation the same practice was pursued, and, after a few days, it left this locality, and the form of disease which then presented itself was what seemed to be *inflammation of the bowels*, which was subdued by appropriate remedies, but not to the relief of the patient. The next manifestation was inflammation of the lungs, in which there was great difficulty of breathing, a distressing cough, and the sputa or expectoration was slightly streaked with blood. The affection of the lungs yielded readily to medical treatment, but the result was not to get quit of the original disease. This re-appeared on the *instep*, but was ultimately cured. The whole of these remarkable changes occurred within a fortnight. The gentleman is now living.

comparative ease. The local malady has not, however, quitted the body; but has probably gone to the shoulder, the elbow, the wrist, the ankle, or some other part of the animal system. It may properly be asked, *What is it that has thus capriciously changed its seat?* We do not observe this in inflammation of the lungs, stomach, liver, or of any of the viscera of the abdomen. If the *knee*-joint had been structurally affected by the excited action which was present in it, as the organs alluded to are by this action which is designated *acute inflammation*, it is clear that it would not be the seat of distressing disease one day, and in a great measure well the next.

What inferences may legitimately be deduced from these discrepancies manifested by affections, to which the term *acute inflammation* is regarded by all writers as equally applicable? A valuable practical truth is involved in them.

. The conclusion, which, to my mind, has for many years appeared a self-evident fact, is, that *inflammatory* diseases, without any exception, are *nervous*, employing the term in a way which is just and strictly philosophical. The *first* change in all tissues, which subsequently become the seat of *acute inflammation*, is in *nervous matter*: and further, the structural changes which take place in any of these tissues during the violence of the inflammatory action, is owing to the CONCENTRATION of the nervous power. The changes which occasionally *succeed* this local vital excitement, as congestion, abscesses, ulceration, tubercles, and other morbid conditions, arise from a *diminution* of the nervous principle and its irregular distribution. It is the *withdrawal* of this agent, in different degrees, from tissues which it animates, that is mainly, if not entirely, the cause of the origin of a formidable class of diseases, as *cancer*, and the various affections to which the term *scirrhus* is applied. On the diminution of nervous

action in certain tissues, congestion is gradually induced, and according to the nature of these tissues, and the offices they perform, one step of disorganization follows another, until, at length, the organs, which are the seat of this vital disturbance, have lost every trace of their natural structure.

Scarcely any region of the animal system is so frequently attacked by scirrhus disease, as the female breast, which is not at all strange, when its constitution and functions are considered. It is a gland destined by nature for important purposes, but when fully developed, it is only occasionally or periodically in activity,—a circumstance necessary to keep in mind in the attempt to explain its liability to cancer. When this disease manifests itself, both in married and unmarried females, it is generally when the uterus, with which the breasts have extraordinary nervous and sympathetic relations, has recently ceased or is declining its ordinary vital actions. It is at this time that the nervous system undergoes remarkable changes. The cessation of vital activity in the womb produces a corresponding effect in the breasts of the female, *the nature of which is, the withdrawal from or the diminution of nervous energy in them.* It is then that their tissues have to accommodate themselves to a new state of things; and it is in the struggle to effect this that scirrhus and cancerous affections are liable to occur. This subject will, in another part of this work, be more amply discussed.

These are important scientific truths, which, if fully understood and steadily kept in view, will be fruitful in the suggestion and guidance of remedial measures in a wide variety of maladies.

From the pathological principles which are here laid down, it is obvious that the effects produced by the concentration of the nervous power in tissues, represented by the

symptoms of *acute inflammation*, will vary *according to the nature and functions of these tissues*, and the particular influences to which they are subjected.

The vital actions carried on in the joints are for the purpose of contributing to the free movements of them by means of ligaments and muscles. They are the seat of secretions, but simply to facilitate these movements. When the nervous power is concentrated in them, as in acute rheumatism, *it cannot expend itself in producing structural changes*: to be in a condition to do this, vital processes must co-exist with organic structures, which from their nature somewhat readily allow of these changes. Neither the bones nor the ligaments are of this character; and consequently the accumulated nervous energy can do little beyond disturbing the circulation in the joints, which disturbance is displayed in their sudden enlargement and extreme sensibility. This sensibility would not be developed, did the structures, in which the nervous principle is concentrated, **ALLOW OF ITS BEING THROWN OFF IN THE EXERCISE OF ANY CLASS OF VITAL ACTIONS**. It is not so disposed of in acute rheumatism, gout, or tic-douloureux. Hence the exquisiteness of the pain in these diseases.

As the nervous power is not used up or expended by the vital actions of the joints, it is to be regarded *as a nervous capital unemployed, and at liberty to move about*. It is this condition of it in acute rheumatism, and other affections, few in number, that accounts for the capriciousness of its conduct, if permitted to use this term, attacking one organ to-day, then leaving it, and fixing itself on another to-morrow.

It may possibly be urged, as an objection to the explanation which is here given of the cause of the distressing sensibility of the joints in acute rheumatism, that this may be attributed to the *unyielding* nature of the structures composing the joints, by which their congested blood-vessels

and associated tissues, requiring space in the ratio of their enlargement, are, as is evident, confined, in a way which would not be the case were the structures different in character; and hence the remarkable sensibility which results. Admitting the full force of this argument, it does not in any degree weaken the physiological principles advanced, but on the contrary strengthens them. The tissues affected by this *physical* cause make efforts to relieve themselves, and it is these ineffectual efforts that increase the local *accumulation* of nervous power, which from the nature of the vital actions belonging to the tissues implicated, is not *expended* by them; and it is from this circumstance that they become *foci* of acute pain, which is the expression of the concentration of the nervous energy.

The same instructive and deeply interesting phenomena occur in gout. The great toe is probably the seat of it. The sensibility created is scarcely equalled by that of any other disease. The affection, like that of acute rheumatism, is regarded as *acute inflammation* of a specific kind; and yet after repeated attacks, the organ on which it fixes itself is apparently unchanged in structure. After a succession of such attacks, the joints of the fingers and of the toes give unmistakable proof of the effects consequent on the frequently recurring visitations of the disease.

The exquisite sensibility which particularly characterises gout, arises, as in acute rheumatism, from the inability of the organs attacked, to *dispose* of the strong current of nervous power which they receive, by the exercise of the vital processes natural to them: they cannot expend it nor throw it off. Hence it becomes a large accumulated stock in these organs,—a species of floating nervous capital ready to go anywhere, and how often it changes its locality!

I have alluded to *tic-douloureux*, as furnishing corroborative evidence of the justness of the physiological principles

unfolded, in reference to the pathology of acute rheumatism, and it does this in a remarkably striking degree. In some cases of the disease which have been minutely described by writers, the nerves of one side of the head were alone affected ; and on this side the hair grew at nearly twice the rate, and much stronger than on the side exempt from pain, which is a beautiful illustration of the truth of these principles. The nerves of the integuments of the head have comparatively limited vital action ; consequently, when the seat of *tic-douloureux*, the nature of which is, *the concentration of nervous power in them*, they endeavour to get quit of the surplus quantity which is conveyed to them, and they do it, but very imperfectly, in the way in which alone they can make an attempt, and that is *by augmenting the growth and strength of the hair*. Nature does her best and this is the result of her efforts.*

The phenomenon is unequivocal evidence of the *concentration* of nervous power in the nerves. Were such not the fact, how would it be possible to account for the singular and extraordinary changes in the condition of the hair ? Surely an increase in its growth implies the appropriation to this end of an additional amount of nervous power ; and this would not be at hand to give rise to these effects, were it not present in the nerves in superfluous abundance from the nature of the existing affection.

The views which are here advanced, will be admitted, by the candid and enlightened inquirer, to explain satisfactorily the remarkable discrepancies in diseases to which are applied the common term of *acute inflammation*. And yet how unlike they are in every respect, except in their *nervous* origin, and the influence of the nervous energy in the

* A very remarkable case of this kind is related by Bellingeri. The patient suffered acutely for years, and was at last cured by *division* of the diseased nerve.

development of their morbid conditions. The differences which are pointed out necessitate corresponding differences of practice, a subject which it is not my business at this time to discuss.

I have been led into this investigation of acute rheumatism, in order to show clearly the causes which give rise to *constipation*, which is one of its prominent symptoms : and further, to impress upon the professional mind the importance of not disturbing the bowels by aperients or purgatives. Less extended remarks would not have allowed me to do justice to the subject, nor have enabled me to touch upon one part of the treatment of the disease, apart from the employment of medicinal agents, I allude to the application of friction.

I have laboured to prove that acute rheumatism consists in the disordered balance of the nervous system ; the concentration of the nervous principle in the joints and muscles, being at the expense of the abdominal viscera from which it is withdrawn, thereby placing these in a condition altogether inadequate to the performance of their ordinary functions. As previously stated, they are comparatively at rest. They are not diseased, yet their want of vital activity is evidence of extraordinary derangement. It will scarcely be doubted, that, whatever mild and judicious means be devised which tend, in any degree, to re-establish their natural actions, will to the same extent be beneficial to the affected joints and muscles, as these actions cannot be re-established without *drawing* nervous energy from the external organs. Hence, so to influence this animating power, as to give it an *internal* direction, must necessarily afford to them substantial relief, because the concentration of it in the joints and muscles *constitutes the nature of their acute affection*.

One of the modes by which this may be accomplished, is by the application of heat and friction to the *abdomen*.

The way for securing efficiently the first-named object has already been explained.*

In the *second* form of rheumatism which has been considered, and also in that which mainly originates in the derangement of the digestive organs, friction, applied twice or three times a-day, for quarter of an hour, is indeed an invaluable remedy. It compels the abdominal viscera to assume more active and healthy conditions, and every step which is gained in invigorating their vital processes, is not only withdrawing from the joints and muscles the surplus nervous principle accumulated in them, but from the grateful influence which friction exerts, an additional amount is imparted to the animal system. The disease, in fact, is chiefly attributable to a deficiency of nervous energy in the body, and the symptoms unequivocally indicate the fact; which is another, and a powerful reason why such a remedy should be enforced. If employed, as it ought to be, it will, in the course of a few days be followed by gratifying results.

It must not be forgotten, that the acute rheumatism which is here considered,—the *second* form of the disease,—is characterised by a poverty of the vital functions: these break down from weakness; consequently, if the practitioner succeed by medical agents in allaying or mitigating the sufferings of the patient, much remains to be done to enable the latter to acquire the conditions of health and vigour. Among the measures that will conduce to this end, none singly, nor the whole combined, will, in the same short time, exercise a beneficial influence equal to that of friction. And why? Because its inevitable tendency is to awaken new life in the abdominal viscera,—to re-establish their natural vital actions,—the evidence of which is seen in the improved appe-

* See page 53.

tite, and in the ability of the digestive apparatus to efficiently elaborate substantial and nourishing food.

§ 9. *The Consideration of Constipation in connection with Typhus and Typhoid Fevers.*

I have in a previous part of this work* treated of friction in its application to these affections, but of constipation, which almost invariably accompanies them, only incidentally. The importance of the subject will be a sufficient apology for the discussion of it on this occasion; and particularly, as my observations on the use of friction in typhus and typhoid diseases appear to have been somewhat misunderstood. An able and liberal writer, though displaying strong antipathies to homœopathy, in reviewing this work,† quotes from it the following passage:—"It is generally imagined that there are morbid matters in the bowels, in typhus fever, which ought to be evacuated. There are none half so injurious to the system as the efforts made to remove them." The reviewer remarks: "Does Dr Holland mean to say that he would leave everything to nature?"‡ I certainly mean no such thing. I should treat the disease by homœopathic remedies; but most assuredly should not allow the patient "to swallow a pill or draught" for the purpose of acting upon the bowels or for any other object.

The reviewer proceeds to say: "It is not unreasonable that he (Dr Holland) should place a high value on homœopathy; he will, however, hardly persuade the public that, as a science, it will darken the immortal memory of the Gregorys and Alisons, or bury in oblivion our Simpsons, Christisons, and others." I should be sorry were it to lead to either of these results. The memory of the two named

* Page 51.

† Part II.

‡ *The Caledonian Mercury and Daily Express*, Nov. 19th, 1859.

will live long and justly. The latter of the two was my revered teacher, and a more painstaking inquirer after truth, a more conscientious, benevolent, or worthy man never breathed. Of the living, who are here alluded to, they have high and distinguished claims to recommend them to our consideration and respect. Their scientific attainments should not, however, blind them to the appreciation of merit in others, though the views of the latter may be opposed to their own. The world is sufficiently large for the admission of new truths; and the way to increase its receptive capacity is to get quit of long-cherished fallacies and illiberal prejudices.

The state of the animal system suffering from typhus and typhoid fevers has already been generally explained. They are diseases characterised by remarkable depression of the *circulatory* and *nervous* functions. The blood, according to the aggravation of the symptoms, always accumulates in the abdominal viscera: they are oppressed by it, and a considerable portion of it is motionless,—is unaffected by those powers on which its circulation depends. The nerves of these organs, and of the whole body, are exceedingly weak, conveying only to the different structures an amount of nervous energy sufficient to support vital action, struggling, and often in vain, to maintain human existence. At this time, what is the condition of the viscera of the abdomen, correct views on this subject bearing intimately on the question, What should be the line of practice pursued in reference to the bowels? The functions of the whole of the viscera are comparatively at rest. The stomach is receiving no food beyond water, or matters of trifling moment as to strength or quantity; and consequently it is not excited to the copious secretion of gastric juice. This is not wanted, aliments not being present on which it may be expended, and without the presence and influence of these, the liver and pancreas

fail to be stimulated. These organs have nothing to do, and they do little or nothing in connection with the digestive process. Scarcely any bile is poured into the duodenum, the first of the small intestines, and the large intestines must likewise necessarily be inactive, in fact substantially in a state of repose. They are not called upon to perform their natural functions, which result in secretions contributing to the formation of fæces. The kidneys are in a similar condition, the secretion of urine being extremely scanty and depositing a thick sediment.

Viewing the animal system under these aspects, which will be admitted to be a faithful picture of the existing state of things; it may be asked, What are the indications for the employment of aperients or purgatives? There is little or nothing in the bowels to be removed; and, therefore, if given, on the supposition of the accumulation and retention of fæcal matters, they are clearly not required; for how can such matters be produced, unless the organs have that degree of activity which is necessary to the secretion of them? And how can this activity be excited when there is no nourishing and stimulating food in any part of the alimentary canal? This class of organs secretes only from the *natural* stimuli to which they are subjected, at least in a way worthy of notice, and these stimuli must be ingesta of some kind.

From these observations it is evident, that aperients and purgatives are not needed to remove accumulated fæces. But what action will they exert on the abdominal viscera? They will disorder and weaken the whole of them. Let the reader imagine what are likely to be the effects of an active and disagreeable drug-compound, pills, draught, or mixture, coming in contact with the delicate mucous membrane of the stomach, unprotected from their baneful influence by the presence of aliments, damaging, in fact, its

vital conditions in their passage to the intestines. It will not be contended that they are given to act upon that organ, as it is not the seat of accumulated matters or of morbid secretions ; and, therefore, why should it be seriously disordered by drugs of this kind? This is an important and pertinent question and by no means easy satisfactorily to answer.

Does it not appear probable that the stomach would much sooner acquire its usual healthy functions if indulged with rest or not thus disturbed? The object of the practitioner is to act upon the intestines and *not* upon that organ ; but his remedies do not allow him to exempt the latter from their action ; and consequently he causes unquestionable mischief in one portion of the alimentary canal in an attempt to affect another. This is scarcely a philosophical mode of procedure nor is it consonant to common sense ; and yet it is the prevailing practice in the treatment of typhus and typhoid diseases.

When the active drug-compound has reached the intestines, it is here in contact with the same delicate mucous membrane, not richly coated with *chyme*, the result of the digestive process in the stomach, but offering a somewhat *naked* surface to the action of the combined purgative elements: these do their duty,—they excite and disorder the liver, the pancreas, and the intestines,—the gratifying consequences of which are seen in several alvine evacuations. The practitioner is satisfied, and so are the friends of the patient with these effects. Both have this conviction,—an agreeable feeling to foster,—that whether he recover or not active practice has been employed, which of course implies that all has been done which it was possible to do. Neither the one nor the other has the slightest idea that too much may have been attempted. The activity of the treatment constitutes in the opinion

of the non-professional public the skill of the medical attendant.

This subject may be studied in some other points of view of great practical importance. Typhus and typhoid affections are always tedious and occasionally difficult to cure, arising from the depression of the vital powers and the consequent *congestion* of internal organs. Apart from medicinal substances, one great object, which should never be lost sight of in the treatment of these diseases, is to *economize* the strength of the patient,—to prevent, as far as possible, all waste of vital energy,—recovery depending on the *amount* which has been husbanded. The functions of life are struggling for existence, and to aid them in their difficulties, *is to permit the animal system to make the most of the little food which the patient is able to take*, and there is only one way in which this can be accomplished, and that is by allowing the bowels to be at rest. Everything of an aperient or purgative character that irritates them, and expels from them that *little* of nourishing aliment which is present, very greatly diminishes the chance of recovery, and when it does not prevent this, it causes it to be protracted from the unnecessary debility which has been produced.

In my treatment of such diseases, adhering strictly to the principles which are here laid down, it is not unusual to observe, during the severity of the symptoms, alvine evacuations to appearance natural, of firm consistency and not deficient in quantity, a state of things which *never* occurs in allopathic practice: it never did in mine, nor is it indeed possible, if the bowels be constantly forced to act according to prevailing notions on this subject. Such evacuations are evidence, that if we will only allow nature to have a little of her own way, that is, to do in three, four, or five days, or even a longer period, what in health she effects in one day, she will not often disappoint us. She must be narrowly

watched, and gently assisted, but it is necessary to have confidence in her.

It is scarcely needful to remark that when the evacuations are of this character, the animal system is in a state not very remote from that of convalescence, though still suffering from the well-marked symptoms of typhus or its kindred affections. It is clear that the alimentary canal is in a condition that will enable it, as soon as the patient can take more food, to exercise a large sphere of active duties, which is not the case when it has been disturbed by aperients or purgatives.

I trust that the facts which have been stated, and the arguments by which they are accompanied, will tend to disabuse the professional and non-professional mind, as to the necessity or supposed advantage of such remedies in the treatment of the diseases in question. It is true that they are sanctioned by long usage, but this, in itself, is no reason why they should be continued. The natural tendency of science, in its progress, is to explode much that has the hoar of antiquity about it, much that was long cherished and regarded as irrefragable truth.

The views I have laboured to develope are based on scientific researches, and it is on these grounds that they are urged on the consideration of others. It will be the duty of those who do not approve of the treatment recommended, to show that the facts advanced are not facts, and that the reasoning by which they are supported is fallacious.

The utility of friction in correcting constipation, and other symptoms which characterise typhus and typhoid fevers, has already been discussed,* and consequently it is not necessary to allude to it on this occasion.

* See page 51.

§. 10. *The Application of Friction in Diarrhœa.*

The subject of diarrhœa is of considerable importance from its frequent occurrence on functional disturbance of the digestive organs; and likewise from being a prominent symptom in various diseases. Writers have made several subdivisions of it, based on the character of the alvine evacuations, some of these being *feculent*, *bilious*, or *mucous*; others being white, showing an absence of bile, *serous*, *tubular*, or *lientary*, the food, in the latter case being passed with little change.

It is not my intention to adhere to such distinctions though they may have their use. Practically they are of less moment than is generally imagined. They fix the attention on the *results* of morbid action, in place of pointing out the causes in which they originate, and the state of the constitution co-existing with them.

The nosological classifications of writers, embodying a few symptoms, rather than groups of symptoms, which alone would convey a just idea of the disordered condition of the animal system, have, in the way in which they have been carried out, retarded the attainment of correct views on the theory and practice of medicine. They have seldom had a sound physiological foundation essential to a knowledge of disease. As evidence of this, the distinctions were the most elaborate and refined when the healing art rested on no broad or well-established principles; when physiology, or the study of the animal economy in health, was scarcely at all cultivated, and certainly little was known concerning it.

It must be obvious to the ordinary or non-professional mind, that for such distinctions to possess any practical value,—to be a guide in the treatment of disease,—they must express in clear and explicit language *the state of the vital powers generally*, whatever may be the nature of the

existing derangement. This, however, is not possible by concise definitions; nor will it be found in the lengthened observations which accompany them. In proof of this I would refer the reader to the several species of diarrhoea, as particularized by Mason Good, an authority held in high estimation by the profession.* In the description and treatment of them, there is not a remark throwing any light on the condition of the animal system, nor suggesting any remedial measures beyond the exhibition of purely medicinal substances; and these are prescribed not from a comprehensive view of the functions of life, but in accordance with the *character* of the alvine evacuations. The latter alone are insufficient to furnish principles of treatment that will at once be safe, judicious, and efficient.

It must be admitted that this is taking a very limited survey of the animal economy in its disordered conditions. Is it not susceptible of other influences than those which belong to drugs? The ancients looked farther into the human frame, and used means to correct its deviations from health, which their successors of the nineteenth century, claiming higher wisdom and greater knowledge, do not in any degree appreciate.

How is it that learned and voluminous medical treatises, popular and extolled in their day, as if destined to live for ever, after a very brief life, die, leaving scarcely a trace of their existence? In a few years they are unnoticed, and soon become unknown. This is to be ascribed less to the progress of science, than to the erroneous principles on which the works were composed,—the narrow and imperfect foundation on which they were built. The progress of science, in its practical relations to medicine, advances by marvelously slow steps. The cause of this will be found in the

**Opus cit.*, vol. i. p. 271.

limited attention given to the animal system in health. This is not an object of profound study. It is one of those things taken for granted to be known without investigation. Hence the ignorance which prevails on matters of vital importance to humanity. How is it possible to interpret the nature of disease, or to say in what this consists, unless the functions of the organ in which it is seated be accurately known? And how is such organ, in its disordered condition, to be treated as it ought to be, unless the practitioner clearly apprehends its physiological relations to the animal system at large? Yet there is no anxiety displayed to acquire such knowledge. It is not wanted. Not wanted in the attempt to alleviate human suffering? It will be admitted to be superficially possessed by the bulk of the profession.

Medicine has its difficulties when the inquirer has done his best to dispel the mists which invest it. But they will be less dense to him who labours to penetrate them, than to him who gives himself no trouble to see through or beyond them. There are truths and principles to be attained that will amply repay research; and if not as well defined, and placed on the same solid basis as those of physical science, they will nevertheless afford invaluable aid in the treatment of disease.

My study throughout this work will be to show what is the nature of the morbid conditions which exist, and, as far as possible, to explain the causes in which they originate, and the state of the vital powers generally with which they are associated. Nothing less than an extended investigation of this kind, can be suggestive of the application of remedial measures, which are scarcely at all recognised in prevailing modes of treatment.

§ 11. *The Consideration of Diarrhœa occurring in Infants and Children.*

There are few affections to which the young are more subject, on the disturbance of the animal system, from changes of temperature, improper food or over-feeding, teething, and from diseases incidental to this period of life, than diarrhœa in some form; nor is this surprising when the delicacy of the organization of the body and of its functions is considered. Its frequent occurrence is natural, is to be calculated upon from the existing state of the vital powers, a few words on which will not be uninteresting, and can scarcely fail to be interesting. It is important that parents should have correct notions of the character of the living materials at this stage of human existence. They are constantly erring in the treatment of their offspring from ignorance of matters with which they should be acquainted, though they may not seize them in their full significance.

The young child is distinguished by marvellously acute susceptibilities to impressions of every description: the eye to light,—the brain to the stirring impulses of the senses,—the cutaneous surface to atmospheric influences,—and the internal organs to whatever comes in contact with them or indirectly acts upon them. The animal system is, at this time, to be regarded as essaying its first efforts in *learning* to live, in trying to develope and exercise powers which exist only as the flower does in the bud, the unfolding of which depends on genial agencies without:—it is in the condition of the young bird fluttering its pinions, and often before it ventures to commit itself to the apparent void.

Such are the vital endowments of the child at this period of life. The parts of the animal frame which deserve special attention are the *nervous system*, the *mucous membrane*

of the alimentary canal, and the viscera co-operating with it in the digestive process.

The nervous tissue, which has to carry an animating principle to all regions of the body, is as yet soft in texture, feeble in its vital properties, and equal only to the performance of its duties when everything within, and without, harmonizes with its requirements. It is an instrument finely strung, and to keep in tone its numerous chords so that vigorous health shall be the result, it must in every respect be treated according to the lively sensibilities of its organization. One condition which contributes in an important degree to this end, is taking care that the surface of the body is not chilled, but on the contrary, that its natural temperature be strictly maintained, particularly from birth to the completion of the cutting of the first teeth. The neglect of this is fatal to an extent of which it is not easy to convey an exact idea. On the depression of the cutaneous circulation a large amount of blood is at once thrown upon various of the *internal* organs, as the brain, the lungs, the trachea, and intestines; and the evidence of this is seen, within twenty-four hours, in the nipped and altered appearance of the infant. Internal congestion and inflammation are the effects, to remove which is a task not free from serious difficulty. There are only limited vital resources to act upon, and the balance of these is greatly disturbed. Harsh means are invariably injurious, and those are of this character, which by their action either depress or irritate any of the disordered organs; and how few of the remedies employed, in the doses in which they are given, fail to produce one of these results?

The digestive organs of the infant next claim attention. The current of the energies of life is principally concentrated in them. It is not distributed in the same liberal manner, as at a later period, to the muscles, the joints, and the

Cutaneous surface. It is *within* actively employed in processes which provide not only nourishment to maintain the well-being of the animal system, but a *surplus* which is appropriated to the development of its numerous structures. Hence the importance of studying to conserve in integrity organs so engaged,—to guard them from whatever is calculated to disorder their delicately-poised actions.

The mucous membrane of the stomach and intestines can digest only the simplest and least stimulating articles of food; and these, after the child is weaned, until two years of age, and beyond this period, should be its chief diet. It is a mistaken, though a widely-prevailing notion, that meat, and other ingesta not less objectionable, tend to strengthen it. They do nothing of the kind. They force the digestive organs to exercise their powers in a degree which is not natural, and on many occasions in a way which clearly manifests their inability. The consequence, in not a few instances, is the production of unhealthy blood which shows itself in a variety of forms: as external sores or swellings, in the pale and soft flesh, the attenuation of the limbs, the distended abdomen at times arising from mesenteric disease. The child is extremely fretful, and its wakefulness is often remarkable, and from this cause: the whole of the internal nerves are in a state of extreme *irritation*,—of morbid excitement,—which is communicated to the nervous centres, as the brain and spinal cord, and to every nerve of the body; and this nervous condition is frequently aggravated, and on medical authority, by *improper food and stimulants*, recommended on the absurd supposition that they are necessary to prevent the child sinking from the want of nourishment. They augment existing evils and sufferings until at last these happily terminate in death.

Independently of the disorders occasioned by food,

objectionable either from its quality or quantity, inflammation of important organs, and fevers, are ordinary occurrences.

The profession generally err greatly in the dietetic treatment of children. Some of them, unfortunately, are no better informed on this subject than the parents themselves, which says little for their knowledge of the functions of the animal economy. Among the many cases which have fallen under my observation, illustrative of this fact, I will give the following:

I was recently requested to visit in the country an infant eleven months old, and a most miserable object it was. The countenance was thin, white, and anxious in its expression; the arms and legs had reached the last stage of emaciation; the belly was large and hard, the bowels were exceedingly relaxed, the motions were offensive, and composed mainly of crude undigested matters. The child required constant nursing. The mother, this being her first offspring, was nervously anxious, and her fear was that it would die as everything had failed to *strengthen* it. She then stated, that the practitioner previously in attendance, had ordered it to be fed on beef-tea, to be allowed to chew a little meat, but not to swallow it, and to have occasionally ale, wine, and brandy; but none of these things had either arrested the purging, or soothed and comforted the infant. It would indeed have been a miracle if they had. It is scarcely needful to say that these things were discontinued, and the child, which was weaned, was restricted to a milk diet. It gradually and satisfactorily improved, and in the course of a few weeks was convalescent.

The dietetic regimen which is here condemned is far from being unusual. It may vary in degree, but substantially it is that which is enjoined by the bulk of the profession in a variety of affections in which the strength of the

child is reduced. They do not consider the delicacy of its organization, or the effect which strong, and stimulating food produces on the enfeebled and disordered mucous membrane of the alimentary canal, which is, or should be, unaccustomed to its influence. The object should be, not to attempt to correct the existing weakness by such means, *but to remove the disease which is the cause of it*; and if rational measures be employed it is not a difficult undertaking, nor will this treatment require food of the kind mentioned. The necessity of it never occurs in my practice which has been extensive in the treatment of children. It is scarcely possible to speak in terms too strong against its use. It may indeed be laid down as an indisputable principle, that if the simplest of aliments will not strengthen a child suffering from serious disease, (and whatever be the nature of this the digestive organs are always deranged), those which are stimulating will fail. Meat, in any of its conditions, is an extraordinary stimulus, and will occasionally in the adult, recovering from long sickness, give rise to excitement analogous to that which marks the first stage of intoxication.

The absurdity, however, of treating the young in this way will be evident from other considerations. If the food, and other ingesta which are given, and on the ground of their supposed nourishing and stimulating properties, would be unsuitable, at this early age, to the animal system in health, in fact would disorder it, is it reasonable to imagine that they will agree with it when it is the subject of disease? If it cannot, when in a sound and vigorous state, dispose of such aliments to its advantage; would it not be strange if it could digest and thoroughly elaborate them when the mucous membrane of the digestive apparatus, and its associated organs, *are the seat of disturbed vital action*? Yet this train of reasoning seldom presents itself to the professional mind. The argument which regulates their conduct

is this: 'Here is weakness, the child is rapidly becoming more feeble, an effort must be made to invigorate it by strong food and stimulants.' The argument, founded on philosophical views, should be: 'Here is weakness,—great prostration of the vital energies,—weakness occurring under such circumstances originates invariably in disease; and therefore the study must be to discover the nature of this and endeavour to correct it.' This is a common-sense conclusion; but common sense, which is shrewd logical sense, is almost as rare a mental quality as genius, and from its rarity deserves this appellation, is only occasionally exercised in connection with medical practice. It is lauded and used in the common affairs of life, and acutely in the direction of self-interest; and were a tithe which takes this course, implying steady and anxious reflection, devoted to the investigation of disease and its cure, common sense would become familiar with many truths to which at present it is a stranger,—truths which would startle it from their practical value.

From the delicacy which characterises the constitution of the infant, it is necessary that parents should be alive to the first manifestation of derangement, as this is always a matter of some importance; and it generally shows itself in the pallor or otherwise altered expression of the countenance, in fretfulness, diminished appetite, in the state of the motions, or in unusual drowsiness or wakefulness. Disease in the child advances at a very different rate from what it does in the adult. Its progress in the one may be measured by hours, and in the other by days, when both are suffering from the same or similar affections. An excellent writer on this subject has observed: "No indisposition is trifling in infants. Convulsion and hydrocephalus, (dropsy of the brain), the most distressing and alarming diseases to which infancy is liable, come on so suddenly, or so insidiously,

and with such slight intimations, that our attention should be excited to the utmost, by every alteration of appearance or manner in infants, however faint,—however fleeting.”*

A further remark may be made bearing intimately on this inquiry and worthy of attention. The diseases of infants, if of any duration, are always diseases of *depression*. If the symptoms which usher them in be those of acute inflammation, this rapidly declines. There is not tone in the animal system to allow it to be persistent: and hence the difficulties with which the practitioner has to contend, while apparently arising from exhaustion, are ordinarily to be ascribed to *depression* or prostration of the vital powers, unless the remedies which have been employed, as is too frequently the case, have produced the other result. When either condition exists, the application of a single leech, or a few doses of aperient or alterative medicinal agents, will often render recovery impossible. They increase the depression from the exhaustion to which they give rise. Such treatment is not calculated to re-establish the normal circulation of the body, to promote which is the great object to be kept in view.

After these preliminary and general observations it is necessary to treat of diarrhœa, as it occurs under particular circumstances, or in connection with certain conditions of the animal system; and, at the same time, to point out what measures, apart from medicinal substances, may be employed, and with great advantage in the correction of it. These matters, for convenience and clearness of comprehension; will be best discussed under separate heads: they are not, however, introduced as exhausting the subject, but as presenting this in some of its salient features.

* *A Treatise on the Diseases of Children.* By the late MICHAEL UNDERWOOD, M.D. Ninth edition, p. 94.

I. An infant, from exposure to atmospheric influences of a depressing character, takes cold, and the next day there is evidence of this in a slight cough or some embarrassment of the breathing; or the face has a pallid and nipped appearance, and the surface of the body conveys to the hand a sense of diminished temperature; the appetite declines, and the child is fretful. The bowels afterwards become relaxed, and the motions are slimy, somewhat watery, or variously coloured, indications of the existence of *irritation* in the alimentary canal, and of the thorough derangement of its functions. These symptoms are accompanied with the further altered aspect of the child.

There are two questions at this time which will naturally occur to the mind: *First*, What is the nature of the affection? and, *secondly*, What can be done that will in any degree alleviate it?

Neither question is difficult to answer. To the first it may be replied that the blood, which was previously on the cutaneous *surface*, has been driven from it and is thrown upon the *internal* organs. Hence the pallor of the skin, the softness of the flesh, and the shrunken condition of the body: and likewise the disordered actions of the whole of the viscera. These have got more blood than they can properly deal with; and further, which greatly increases the existing evils, neither the lungs nor the skin, from the general depression which is induced, can relieve the animal system, as in health, of the *surplus refuse matters which it is their office to emit or expel*. The blood, independently of its disordered distribution, becomes, therefore, vitiated in its properties and unequal to excite and maintain sound vital action. Such is the pathological or diseased state of the infant.

The next important point for consideration is, What general measures can be suggested that will readily relieve

these untoward symptoms, which quickly pass into others rendering medical aid often of little avail ?

The infant should be immersed in a bath to the neck for two minutes, the temperature of the water being as high as can be comfortably borne ; and then, without drying the body, this should be placed in a warm blanket and rubbed with it for ten minutes. The good which follows will mainly be due to the friction. It is this which invigorates the circulation on the cutaneous surface, enabling it to retain the additional blood brought to it by the application of the water ; and the *retention* of it constitutes in a great degree the efficacy of the means employed. It is unnecessary to observe, as it must be obvious, that afterwards, every care should be taken to excite and keep up the natural heat of the animal system, by proper clothing and an atmosphere contributing to the same end by its genial warmth.

The warm bath can rarely be used with decided advantage except at the *commencement* of functional derangement. At a later period, when the abdominal viscera are considerably congested, and likewise the brain, as is frequently shown by a tendency to stupor or extreme drowsiness, the bath, so far from being beneficial, will, as a rule, be injurious from weakening and exhausting the vital powers, in place of stimulating and invigorating them, creating an *active* circulation on the surface of the body. The utility of the remedy depends entirely on the degree in which this physiological condition is induced, and it can be induced only at an early stage of the disease.

The next remedial measures which are of great value, and will materially enhance the salutary effects consequent on the employment of the bath, are *friction and fomentations to the abdomen*. The former should be used twice a-day in the way previously recommended ; and then a piece of flannel, folded three or four times, after being steeped in hot

water and wrung out, should be placed over the bowels, covering it with oiled silk or any material that will conduce to the retention of the heat. The flannel to be re-immersed when necessary.

These several means are required only when the symptoms, as the frequent action of the bowels, and the *depression* of the animal system, justly create anxiety in the minds of parents. Friction alone to the abdomen will, in most instances, effect the desired changes, and should be steadily applied until the purging has ceased and the motions have become natural.

II. Diarrhœa is a common symptom in infants and young children arising from food improper either from its quality or quantity, and is the cause of a great proportion of the ailments from which they suffer. It is imagined by not a few parents, but very absurdly, that constitutional vigour is in the ratio of the amount of food which is taken, or of its supposed nourishing properties, understanding by the latter such articles of diet as are suitable only to the adult. If the error is not in the use of these, it is in giving in excess that which would be proper only in moderation. The usual consequences of such injudicious conduct is the derangement of the abdominal viscera, at first probably not perceived or suspected; but it advances from one stage of aggravation to another, until at last the face has a white, pasty, and unhealthy aspect; the appetite is variable, sometimes increased, at other times diminished; the tongue is furred, the breath is offensive, the child is feeble and irritable, and *diarrhœa* now sets in, evidence of the irritation of the mucous membrane of the intestines, of the disturbance of their associated organs, and of the general disorder of the animal system. The treatment pursued in such cases very often does serious mischief. The bowels, according to prevailing professional views, must be acted upon by aperients

or alteratives; or their too frequent action is attempted to be arrested by astringents. None of these remedies will influence kindly or beneficially the diseased organs. To stop the purging by astringents, variously compounded, will not remove the congestion and other morbid conditions of the viscera. The evil is not the diarrhœa, but the *cause* in which it originates, and this may readily be corrected by mild means.

Were not professional efforts much less successful than they ought to be, the mortality among children, under five years of age, would not, in my opinion, be anything like what it is. It is painful to contemplate it, and especially with convictions that it might be considerably lessened by treatment more in accordance with the constitutional requirements of the young.

When diarrhœa, and the other symptoms alluded to are present, the child should be restricted to food of the simplest kind, and should have this, if necessary, often, but in small quantities. The digestive organs are not in a state to deal with much at a time. A limited amount is alone adapted to their ability, and is adequate to the necessities of the animal system. To attempt to strengthen this by tonics, stimulants, and similar means, whatever may be the character of them, will generally disappoint expectation. If they are not positively injurious, they are not wanted to ensure a speedy and satisfactory cure. Friction to the abdomen, morning and night, used according to the directions given, will soothe, comfort, and gently excite the abdominal viscera to more natural actions, the proof of which will be seen, in the course of two or three days, in the healthier condition of the alvine evacuations, and in the amelioration of other symptoms.

III. There are other diseased states of the infant which frequently fall under observation, in which it is not always

easy to determine the causes of them, not knowing the circumstances by which it may have been influenced, as marasmus or extreme attenuation of the body, the prominent and tympanitic abdomen, the haggard and miserable expression of the countenance, the white, soft, and bloodless appearance of the flesh, accompanied with extraordinary restlessness and irritability. In such cases diarrhoea is always an exceedingly troublesome symptom. The child no sooner takes food than the bowels are acted upon, showing unmistakeably the extent of the derangement which exists.

Allopathic remedies are rarely equal to the correction of such general disturbance of the vital powers. They cannot strengthen these to whatever class of tonics or stimulants they belong. The enfeebled and disordered animal system will not bear them. It is too exhausted, or in other terms, possesses too little vital capital to allow of treatment of this kind. There is scarcely anything to act upon, and when such is the case, it may be laid down as an unquestionable principle, that active medicinal agents, employed in the way in which they are usually prescribed, will never effect any good. If persisted in they will do harm. Alterative remedies are equally inapplicable, and from the same physiological considerations. Were this a fitting occasion to enter into a full exposition of my views on this subject, it would not be difficult to show the broad and sound foundation on which these assertions rest.

The homœopathic treatment alone meets the requirements of such forms of disease. It does not disturb nature already struggling, and weakly, under serious embarrassments. It tends to lessen these, and in so gentle and genial a manner, that health, when the case admits of cure, steals imperceptibly on the animal system and the result is convalescence.

It is not, however, my business, at this time, to treat of

homœopathy, but of other remedial measures. In affections like the one which has been brought under notice, in which the whole body gives indications of disease, friction to the abdomen and the spine, softly, but perseveringly used, increasing the pressure of the hand as the infant becomes more capable of bearing it, conjoined with fomentations, will, in ten days or a fortnight, be followed by greater salutary changes, than could be produced in the same period by any other mode of medical treatment. None other could influence in the same degree the abdominal viscera which are chiefly in fault; and whatever improvement takes place must originate in them, and contemporaneously in the nervous centres. The means which are here recommended will affect both: will arouse the circulation in the one, in which the blood is more or less stagnant; and as a consequence this will be thrown from within, *outwards*, conveying a stronger and more vivifying current to all parts of the body.

In awakening the nervous centres to augmented activity, a nervous stimulus is liberally distributed, not only to the abdominal viscera, but to every organic tissue. New life may be said to spring up in its footsteps, its presence being instrumental to the manifestation of all vital phenomena. The diarrhœa, which is daily exhausting the strength of the body, is arrested, and by the re-establishment of the natural functions of the alimentary canal, as is evident from the altered character of the motions. Such are the effects of friction, if judiciously and properly enforced, provided that the cases in which it is used admit of cure. In my hands, under such circumstances, it has on many occasions contributed to results, which could scarcely have been anticipated from the extreme attenuation of the body and its extensive derangement.

IV: Diarrhœa is a common symptom in the teething of

infants,—is indeed rarely absent when the process is more than usually tedious and difficult. If the purging is only *slight*, and the state of the animal system indicates no particular disturbance, there is no necessity to interfere with it. It may possibly, in some degree, relieve the irritation of the mucous membrane of the digestive organs consequent on dentition. It is, nevertheless, a symptom which must be narrowly watched, and by no means treated with indifference. When the infant suffers considerably from the cutting of its teeth, the constitution generally becomes disordered; the body loses flesh, and the muscle its natural firmness; the motions, loose, green, or pale, or sometimes mucous, are more frequent; the urine is passed with pain and difficulty; occasionally its secretion is diminished, at other times increased,—the former condition mostly prevails. In the train of these symptoms, if not corrected by nature or art, are others of a more aggravated character, as cough, embarrassed breathing, the greatly reduced strength of the infant, fits, or an inflammatory affection of the brain which often terminates in *serous effusion*; and when the fever suddenly subsides or declines without marked improvement in the general symptoms, this is to be apprehended, and is foreshadowed by indications which cannot be mistaken, as restlessness, rolling of the head, and constantly changing the position of it; after which the child becomes heavy and drowsy, and is not easily aroused from its somnolency. It is then that remedial measures have to be employed commensurate with the urgency of the case, and if they fail in arresting the disease death speedily ensues.

It is not necessary that any great serous effusion should take place, either upon or within the brain, to produce this result. The *congestion* of this organ, which *precedes* the effusion, is the cause of such general nervous depression that the infant may sink from the effects of this alone. The object of

medical treatment should be to correct this *congestion* of the cerebral tissue, and in proportion as this is accomplished, the serum or watery fluid which had been thrown out is removed by the improved action of the brain.

On the occurrence of the symptoms described, friction or fomentations to the abdomen, as previously recommended, should be perseveringly applied. Their salutary influence at this time is not difficult of explanation. The nervous and circulatory systems are struggling, and almost in vain, to carry on their functions. The nervous energy is feebly transmitted from the nervous centres throughout the body; and the current of blood which is conveyed from within, outwards, is equally weak; and from the weakness of the circulatory powers, congestion occurs not only in the brain, *but in the whole of the abdominal viscera*; and the degree in which it takes place in the latter, is an influential cause increasing the severity and danger of the cerebral affection.

It must not be imagined that congestion can possibly be *partial*, confined to a particular organ, when the functions of life generally are suffering from depression, as in inflammation of the brain *tending* to effusion; or when this exists as a consequence of the former. The brain will be primarily congested from the causes in operation; but the moment the blood becomes stagnant in it, or feeble in its motion, the nervous and circulatory systems throughout the body are in a depressed condition,—an inevitable result of which is, *the greater or less accumulation of blood in every internal organ*, but especially in the abdominal viscera. A knowledge of this pathological fact has a most important bearing on the line of treatment which should be pursued in the endeavour to cure this formidable disease of the brain.

Among the means which are usually employed by the allopath in cases like the one which is here studied, is the

application of a leech or leeches to the temples or behind the ears, or a blister to the latter situation, or to the nape of the neck ; accompanying these measures by the internal exhibition of some of the preparations of mercury. The principles on which these several remedies are prescribed, are to subdue the inflammation which is supposed to exist, or the congestion which has been induced. The inflammation, except in the most vigorous infants, seldom occurs in a form that can be regarded as decidedly *acute*, comparing the symptoms with those manifested by the adult ; nor is this acute state of long continuance. It passes rapidly into *congestion and effusion*. The physiological condition of the vital functions of the infant, which have been fully discussed, satisfactorily account for changes of this kind. Such treatment is only occasionally successful, or the success is much less than would result from other measures. It exhausts the vital powers and proportionately aggravates the existing depression. When I practised allopathy, these were consequences which frequently fell under my observation, and the fatality which attended the treatment caused me to abandon it altogether, though at the time, in other respects, carrying out the principles of the prevailing school of medicine. I adopted milder and more rational methods, and certainly with greater success.

These remarks have prepared the reader to understand on what grounds friction and fomentations to the abdomen are calculated to give rise to beneficial effects, when the brain is the subject of formidable disease, as congestion, conjoined with irritation or slight inflammation. Whatever tends to excite and invigorate the circulation of this organ, or of its investing membranes, will cause the blood, which is more or less stagnant in it, to be thrown into motion, and in the degree in which this takes place will the cerebral symptoms be relieved.

The different parts of the circulatory apparatus are so associated together, that it is impossible to influence one, so as to arouse the blood in its arteries and veins to more vigorous movement, without producing a change in the condition of the blood in *other* regions of the body. The result will of course be proportionate to the mass of blood-vessels *directly* acted upon by the means employed. Friction and fomentations to the abdomen will act upon a greater amount of blood, than the application of them to any other part of the animal system.

It is on these considerations that such remedial measures are recommended. According as they improve the circulation of the abdominal viscera, they excite that of the lungs, and invigorate the contractions of the heart. They create large centres of vital activity where the powers of life are languid and ebbing. In these salutary changes the oppressed *brain* participates. Its numerous small vessels or capillaries are stimulated to healthier action, enabling them to urge forward blood which is at rest, or that which is feebly struggling to pursue its course. Such are the pathological conditions, which *constitute the nature of the existing cerebral disorder*.

Affections which are alarming from the urgency of their symptoms,—and how many of the diseases of the infant are of this character!—call for extraordinary remedial efforts. There is no time for procrastination or trifling. In twelve or twenty-four hours the chance of recovery may be lost. The congestion, and the consequent depression of the vital functions, will yield only to art within certain limits. If unsubdued, they soon reach a point beyond the avail of medical skill. The symptom which indicates danger, is *drowsiness*, imperceptibly passing into a state of coma or stupor terminating in death.

V. Diarrhœa, unconnected with dentition, is also common

to infants, particularly those of delicate constitution, at the period of weaning. The evacuations are in general greenish, watery, or slimy, accompanied by griping pains, retchings, and vomiting. At first there is fever, but not of a kind that is evidence of *acute* inflammation, and it declines during the persistence of the rest of the symptoms. The body rapidly loses flesh, and at length is considerably emaciated. The causes of the diarrhœa are improper food, certain states of the atmosphere, as extreme moisture and heat, and not unfrequently the disordered condition of the nurse's milk.

The disease, manifested by these symptoms, is considered by writers to originate in inflammation of the alimentary canal, occasionally extending to adjacent viscera. The appearances on dissection, as redness, congestion, and the more or less structural changes of the intestines, are regarded as establishing the justness of this opinion. It is often, however, exceedingly difficult, in the young, to distinguish between the effects of *inflammation* and of *irritation*, in connection with the weakness or prostration of the functions of life. If the disorder be treated in a way which increases the existing debility, which is indeed too often the case, on the supposition that the inflammation present necessitates such practice, recovery will not be the rule, but the exception. Success will almost altogether depend on the degree in which the strength of the animal system is husbanded at this time. The means employed, to attain the object in view, must have the co-operation of the vital powers; and hence the importance of economising the expenditure of them.

The stools in this affection are variable in character in different cases, and in the same case; nevertheless they are mostly of a green or bilious aspect, evidence that the functions of the liver are greatly deranged. *Irritation* and *con-*

gestion of the abdominal viscera generally are, in a large proportion of instances, the pathological conditions which exist, and to these the attention of the practitioner should be mainly directed.

It is in cases of this kind, that friction and fomentations to the abdomen are invaluable. In my hands they seldom, if ever, fail, when properly used, to produce the most gratifying effects. In three or four days the gripings, pains, and other symptoms, are considerably relieved; the motions become less frequent and more natural in appearance, and the general expression of the child is correspondingly improved. The difficulties of the practitioner are ordinarily few when homœopathic treatment is conjoined with these measures. The latter are important adjuncts, and when symptoms are urgent, from their severity or persistency, it will be a dereliction of duty not to call in their aid.

The food of the child, if weaned, should be bland and small in quantity, until the digestive organs have acquired tone sufficient to perform their functions correctly, which will be shown by the state of the alvine evacuations. When the infant may be considered as convalescent, friction to the abdomen, once a-day, may for a short period still be used with great advantage. The thorough re-establishment of the normal and vigorous vital actions of the abdominal viscera is more tedious or protracted than is generally imagined.

§ 12. *The Application of Friction in Dysentery and Dysenteric Affections.*

In the investigation of the influence which friction is capable of exerting on the animal system, in its numerous deviations from health, it is important to trace its application to those which come under the designation of dysentery. The forms of derangement which this manifests, in the

greater proportion of cases, may be greatly relieved by measures which are here termed adjuncts: in fact, such is their value, that to forego the use of them would argue either a want of knowledge of their efficacy, or indifference as to the course and issue of the malady. It is not my intention to enter into an elaborate discussion of it, but to treat it in such a way as will enable me to bring prominently into view its broad and characteristic features; or, in other words, to show what are the morbid conditions which distinguish its different varieties. My object is to be practical, and in the endeavour to be so, and especially to show the grounds on which certain modes of treatment are recommended, it is necessary that the nature of the disturbance of the vital functions, co-existing with and constituting dysentery, should be distinctly stated.

The disease frequently occurs in summer and autumn, towards the close of the one, and at the commencement of the other. The entire of the powers of the animal system change with the seasons. The warm days of summer arouse the nervous centres and their nerves to greatly increased action, imparting to the surface of the body an energy of function peculiar to this period of the year. The fluids are abundantly drawn to it, as is evident from the florid expression of the countenance, and the copious perspiration consequent on slight muscular exertion. In the feathered tribe of the creation, analogous effects, arising from the same general causes, are observed,—displayed in the production of new and more brilliant plumage. The bird acquires its summer dress,—the temporary appendages of the season.

It must not, however, be inferred that the extraordinary changes induced are confined to the cutaneous surface. They are not so limited. They belong equally to the *internal* surface of the body, and are expressed in the greatly

altered functions of the abdominal viscera. The physiological conditions of these are in harmony with those of the skin, and are indicated in their *greater liveliness or susceptibility to external and internal impressions*, such as atmospheric vicissitudes and aliments difficult of digestion.

The state of the animal system may be said, if the term be permitted, to be accurately *reflected* in the affections which occur at this time, as dysentery, cholera, diarrhœa, colic, and fevers. To account for the production of these, we have on the one hand, in active operation, atmospheric conditions as *exciting* causes ; and on the other, as recipients of their prejudicial impressions, the abdominal organs acutely susceptible of external influences. A sudden change in the character of the former, whether in respect of temperature or of electricity,—and the latter is often an influential circumstance,—at once, and seriously, disturbs the functions of life. The type of the disease which arises will be determined by the then state of the constitution. If this be robust or possessed of great tone, the disorder will probably exhibit marked *inflammatory* symptoms ; if, however, it be naturally weak, or debility has in any way been induced, internal *congestion*, accompanied with little or no inflammation, will be the prevailing feature of the affection, and will require a mode of treatment widely different from that which would be appropriate in the other case.

Dysentery, cholera, diarrhœa, and colic, as already remarked, commonly occur towards the decline of summer and at the commencement of autumn, the cause of which admits of ready explanation. At these particular periods, the animal system may be regarded as struggling to assume new vital arrangements in harmony with the altered condition of the atmosphere, at times exceedingly variable, unlike those which substantially distinguish either season ; as if nature herself without, and such is the fact, had her difficulties and

embarrassments in the process of *transition*. The weather is occasionally oppressively hot and sultry, when the heat, according to our notions, should be temperate ; or cold, chilly, and searching, when it should be agreeable to the feelings. It is these extremes, or grades of them, that affect the body when it is the least capable to offer resistance ;—when indeed it has neither the constitution of summer nor of autumn.

The symptoms of dysentery differ greatly in degree and kind ; but in a mild form, or that which often prevails, there is pain in the belly, griping, and tenesmus, or a constantly recurring and distressing sensation, as if the bowels were immediately to be acted upon, while the alvine discharges are exceedingly scanty, and mostly streaked with blood. The urine is scalding, and is passed in small quantities. The disease is sometimes preceded by diarrhœa, at other times by constipation ; but in the greater proportion of cases the dysenteric symptoms appear from the first, accompanied or followed by chills or rigors. In the intervals of the calls to stool there is little or no pain in the abdomen, but the patient is languid and depressed in spirits ; the pulse is usually quick and small, though occasionally scarcely perceptibly affected. Its conditions depend on the degree of *congestion* or of *inflammation* which is present. The former is never absent, but varies in amount according to the severity of the malady.

The disease appears under two distinct forms, termed by writers the *acute* and the *asthenic*. In the former, the symptoms previously mentioned are greatly aggravated. The motions are chiefly blood and mucous ; the gripings and tenesmus are frequent and distressing ; there is constant heat or pain in some region of the abdomen, and tenderness is felt on pressure. In addition to these phenomena, there is considerable fever, as indicated by the dry and increased

heat of the skin, and the somewhat strong and accelerated pulse. *The vital powers are excited and not depressed* until the affection has passed into an advanced stage, which is one often of extreme danger.

In the *asthenic* form, which is that of weakness or debility of the vital functions, there is no fever or none of any moment: languor and depression appear from the first, associated with the symptoms described under the head of mild dysentery, or such as ordinarily occurs.

It is acknowledged by all writers that the disease is principally seated in the *large intestines*, and in the colon in particular, the reason of which has not been explained by pathologists. "By what means," remarks Mason Good, "this exciting cause operates upon the larger intestines, rather than upon any other cavity, or produces the symptoms of dysentery, rather than those of diarrhœa, cholera, or colic, we seem to be incapable of determining."*

The elucidation of this does not, however, appear to me difficult. It may be accounted for on anatomical, physiological, and pathological grounds, which do not appear to have been at all taken into consideration by previous inquirers.

I. The colon, for example, has peculiar anatomical conditions which are not favourable to the *downward transit* of its contents. It is described as composed of three parts, an *ascending* portion, the *transverse* arch, and the *sigmoid* flexure. The course which it pursues before terminating in the last intestine, the rectum, will tend rather to retard than to facilitate the passage of the refuse matters resulting from the process of digestion; and in this point of view the arrangement is evidence of Supreme Wisdom. The retardation of them, or the slowness with which they are urged forward, enables the colon,—which in length is about one

* Mason Good, *opus cit.*, vol. ii. p. 602.

fifth of that of the whole intestines,—to absorb from the matters in question *whatever they contain that is nutritious*, to the advantage of the animal system.

II. The next important distinction between the *small* and the *large* intestines is, that the former are more active and possess a much *higher* degree of vitality than the latter; and hence, when bile or other irritating substances are present in them, as imperfectly digested aliments, they have the power to convey them forward and lodge them in the larger intestines. Had they not this ability from their aroused vital energies, they would be the seat of the distressing symptoms of dysentery which is not the case.

It is in the stomach and the *smaller* intestines that digestion is accomplished; and it is the office of the latter organs to *absorb* the food converted into what is termed *chyle*,—a milk-like fluid. The digestion and absorption of the aliments received, necessitate a *higher degree* of vital activity than is required by the larger intestines for the exercise of their functions: and in the ratio of the difference, is the greater ability of the former to relieve themselves of offending matters by conveying them into the colon.

III. The writer asks, How is it that the disease is dysentery, and not cholera, diarrhœa, or colic? The answer to such a question is, that disease, whatever be its nature, is the expression, at the time, of the state of the animal system, or of certain organs, and of prevailing atmospheric conditions. The association of the two determines the character of it; and as they are exceedingly variable, it follows that the morbid phenomena to which they give rise will be equally so.

IV. In dysentery, the bile is poured into the intestines in increased quantity, or is vitiated in its properties, and it is chiefly to the latter circumstance that the severe tormina or gripings are to be ascribed. The susceptible mucous

membrane, and in most cases peculiarly sensitive from the influence of external or internal causes, is irritated by the presence of the biliary secretion, and in certain constitutions acute inflammation is the consequence.

The highest medical authorities are at variance concerning the pathology or nature of dysentery, and the treatment recommended is not less discrepant. Dr James Johnson, and others, contend that the liver is in *every* instance the primary seat of the disease, the intestines being only affected secondarily; while others, as Dr Cheyne, Dr O'Brien, and Dr Chisholm, assert that the liver is almost invariably *unaffected*. They, however, admit that the gall-bladder was always "of a most uncommon size, and full of yellow bile." How such a pathological state could exist, and the liver be unaffected, it is not easy to imagine. This condition is evidence of one of two things: either that the bile had been secreted in greatly increased quantity, or that its escape from the gall-bladder was interrupted. One of these inferences is inevitable. If increased in quantity, it is clear that the functions of the liver had been unnaturally excited, unequivocally establishing the derangement of the organ: if, on the other hand, the flow of bile into the intestines be arrested, the liver, failing to have an *issue* for its secretion, will as a matter of course, become disordered. So that on either view the disturbance of this organ is indisputable.

In the early stage of the disease the bile, vitiated in quality, would flow into the duodenum, the first of the small intestines, and in its passage downwards would occasion the sufferings characteristic of dysentery. Subsequently its escape would be interrupted; and hence the extraordinary distension of the gall-bladder, the cause of which, *keeping in mind the excited action of the liver*, is not difficult of explanation.

Bile is not continuous, but *intermittent* in its discharge

into the duodenum or small intestine; and the period, as well as the degree, of its flow, depends on the *activity* of the digestive process. The biliary secretion is not wanted when the stomach and the duodenum are at rest, but when these organs are engaged in the digestion and elaboration of food. It is then, and then only, that it escapes into the duodenum to mix with the chyme or food which has undergone the first stage of digestion in the stomach, and it is essential to the completion of the digestive process.

In a severe attack of dysentery, for it is only when such is the case, that the gall-bladder is particularly distended with bile, the patient takes little or no food, certainly none that will strongly excite the stomach and the small intestines; consequently, while the bile continues to be secreted, there is the absence of the aroused vital conditions of these viscera, necessary to the *discharge* of the biliary secretion into the duodenum. It is mainly from this cause that the gall-bladder attains an uncommon size.

In the foregoing observations it is shown why the disease is principally seated in the larger intestines; or, more correctly speaking, why the effects of it are observed in them in a more aggravated form than in the rest of the intestinal tube. Writers who have treated largely of dysentery have not attempted to account for the fact.

It now remains to present a general view of the animal system suffering from the several forms of this disease, but more especially such as ordinarily fall under notice. The causes of it may be classified under two heads—the *sympathetic* and the *direct*. The former include external influences, as atmospheric conditions;—the latter different articles of food which disorder the digestive organs. The symptoms which arise from both are much the same. When, however, the body is plethoric or of full habit, the dysenteric affection, occasioned by aliments difficult of

digestion, will usually be accompanied by inflammation of a more acute kind, than when the exciting cause is external.

The disease is essentially distinguished by internal *congestion*, and particularly of the abdominal viscera; and the greater part of the inflammatory symptoms, occasionally associated with it, spring out of it. They are indications of the efforts of nature aroused to throw off that which oppresses the functions of life. In a great proportion of cases they are not in the train of the malady, or if present, they are *sub-acute*, or exceedingly subdued in character.

When dysentery originates during the prevalence of hot and sultry weather, the heat operates as a *depressing* cause. For a time it is a stimulus which acts genially on the animal system; but if long continued, or in excess, debility is the natural result,—the expenditure of vital power has exceeded the supply. The vegetable kingdom offers illustrations of the same fact. Plants, like animals, have only a given amount of vital resources; and if these be unduly exhausted, which they are by extreme heat, that which should be green becomes brown, and the flower in its beauty droops and fades.

On no organ of the body does a high atmospheric temperature produce greater changes than on the liver, as is evident from the effects of tropical climates, manifested in diseases which from their prevalence and severity are peculiar to them. From the excited activity of this viscus the secretion of bile is greatly augmented, and is rendered much *more acrid or irritating in its nature*. The liver, and the abdominal viscera, are so influenced by the heat, that a point is at length reached which must issue in derangement of some kind, and the nature of the disorder is determined by the flow of vitiated bile, like boiling lead, into the intestines. It is this which is the cause of the first symptoms of dysentery. The smaller intestines are aroused by it to

vigorous contractions, and by the exercise of these it is conveyed into the colon, which, from its anatomical and physiological conditions, favours the *retention* of it. Hence the tormina or severe gripings in this region of the abdomen; which, if not promptly relieved, are followed by inflammation and ulceration: tenesmus, or the urgent desire to go to stool, is distressing; the motions are chiefly blood, mixed with pus or matter.

From the first symptom to the manifestation of this aggravated form of disease, *congestion* of the abdominal viscera has steadily increased. It is an effect which necessarily arises from such internal *centres* of functional and structural changes. The blood is drawn from other parts of the body to them; and, moreover, the weakness and depression of the vital powers, the consequence of the existing derangement, lead to the same result. The heart and arteries are unable to transmit the blood from within, outwards, as under ordinary circumstances; consequently, the accumulation of it, in different degrees, throughout the abdominal organs, but especially *in the large veins connected with them*. This state of the venous trunks is an important consideration, in reference not only to dysentery, but numerous other affections. It is seldom, indeed, never distinctly, seized by the pathologist, in the study and treatment of disease, as a *cause* influential in the production and maintenance of extensive functional and structural mischief; or as suggestive of the application of efficient remedial measures. Whenever the vital energies are *depressed*, in acute or severe maladies, the organs in which blood will always accumulate, and in the greatest amount, *are the large abdominal veins*. Their structure, situation, and their relations to the different viscera, account for their readiness to receive it. When the circulation in these viscera is disordered, imperfectly carried on from their derangement, the

veins in question immediately feel the effect. The embarrassment of the vital powers, if of the character which is here supposed, disturbing the functions of the entire animal economy, causes the blood to be withdrawn, in degree according to the aggravation of the *depression*, from the extremities and surface of the body, and a great portion of it is wholly or comparatively at rest in these vessels. The fact will scarcely be doubted by those who have given attention to physiological and pathological researches.

The next step in the inquiry is to endeavour to show how this state of the veins will influence the already disordered abdominal viscera,—a matter which has not been taken into account or investigated by any writer. When the blood ceases to flow freely in these vessels, it is still transmitted with more or less force by the *heart* and *arteries* to the viscera, where, from existing disease, it is only imperfectly converted from arterial into venous blood. In the latter condition, whatever may have been its changes, it has to be conveyed from minute veins into larger ones, and the contents of these into others of greater capacity, and at last into the ample abdominal venous trunks. There are, however, obstacles to its *return* in the congestion of the veins extending from the minute to these trunks. The result is the accumulation of it in the *small* veins, which enter into the structure of the internal organs. There are not the same impediments to the flow of the arterial fluid to the latter, as there are to the escape of the *venous* from them; and hence the disturbed balance between the two *necessarily leads to the congestion, in various degrees, of the whole of the abdominal viscera*. Such is the state of things in dysentery, and, as previously observed, whenever the vital functions are seriously depressed.

This venous congestion inevitably disturbs the *arterial* circulation in the tissues in which it takes place; and

when the constitution is sufficiently vigorous to give rise to violent *re-action*, this is manifested in the form of *acute* inflammation; and in that of *sub-acute* when the vital endowments are less prone to excitement. In dysentery these pathological states are of frequent occurrence, and originate in the manner described. The practical value of these views will be rendered more intelligible by a few further observations.

The *accumulation* of blood in the abdominal veins, conjointly with the direct action of the bile upon the intestines, is the cause of the symptoms which constitute this affection. By preventing the *return* of blood from the latter organs, these become the seat, if not relieved by prompt and judicious means, of serious functional and structural changes, as inflammation, ulceration, and a softening of the mucous membrane; nor are such changes confined to the viscera in question.

Is it not evident from these pathological principles, that, in the consideration of remedial measures, one of the most important objects, and the first which should suggest itself to the practitioner, is to *endeavour to correct the congestion of the abdominal veins and of their associated organs*? According as this is accomplished the disease gradually declines. To the presence of this morbid condition, which always *precedes* structural alterations, the severity and persistency of its symptoms are to be traced. Independently of medicinal substances, of which it is not my business on this occasion to speak, extraordinary benefit may be derived from the employment of other means, which, in the treatment of this distressing malady, never ought to be neglected. In my hands they have invariably been attended with marked success; proving, in my opinion, the justness of the pathological doctrines which led to their adoption.

Dysentery may arise from damp feet or exposure to a

chilling atmosphere. In this case the animal system will possess a susceptibility to its attack, from the condition into which it has been brought by a previously prevailing high temperature. It is this which has occasioned the copious secretion, and the more or less vitiated properties of the bile, effects, either singly or in combination, essential to the development of this disease, and particularly the severe forms of it. The cold, acting from without, at once depresses the functions of life, giving rise, as in the case already considered, though in a different way, to congestion of the abdominal viscera. The affection, occurring under these circumstances, is seldom accompanied with the same amount of inflammation, as when it is the result of excessive heat, or immediately succeeds it, from the influence of other exciting causes.

The disease is to be studied under other points of view. Bilious and typhoid fevers, in autumn, not unfrequently terminate in it, the febrile symptoms disappearing in those of dysentery. This was noticed by the illustrious Sydenham, and he described it as fever *turned in upon the intestines*, and in this light the phenomenon has been regarded by succeeding writers. The language expresses clearly the meaning intended to be conveyed, but affords no information as to the mode in which the change has been brought about. On this subject we are left entirely in the dark. The fever is certainly not thrown upon the intestines, though it is the cause of the dysenteric affection. During its continuance, it excites *and deranges the functions of the liver*, until at last the bile, abundant or vitiated in its nature, from its presence in these organs, irritable from pre-existing disorder, is the cause of the conversion of the one disease into the other. The fever substantially dies, and a new malady is the consequence. To talk of the former being turned in upon the intestinal tube, in the way in which it is inter-

puted, is an absurdity. From the first it has been acting prejudicially upon it and the liver, and the result of its baneful influence is dysentery. *The fever has expended itself in the production of this.*

Another transformation, by no means uncommon, is that of dysentery into fever, which is likewise easy of explanation. The more prominent dysenteric symptoms gradually decline; or, in other words, the abdominal viscera have in part recovered from their derangement, but are still struggling, and ineffectually, to right themselves. Their efforts to effect this are displayed in the production of fever. This form of disease is the obvious disturbance of the whole of the vital powers. Every organ of the animal system becomes variously disordered. The character of the fever is typhoid, evidence of the general depression of the functions of life. Its primary and principal seat is in the abdominal viscera, and the morbid condition of these, out of which it arises, is *congestion*. It is this which is the cause of the febrile disturbance; and whatever tends to diminish it, without weakening the animal system, will materially facilitate restoration to health.

When dysentery does not terminate fatally, or within a few weeks favourably, it assumes a *chronic* form, which is dangerous and difficult to cure. Functional derangement has now passed into structural changes. The motions are frequent, loose, and fœcal, and often mixed with blood, and sometimes with pus or matter. When the viscera generally are not extensively affected, a relaxed state of the bowels is an invariable concomitant, and is greatly aggravated by deviations from strict rules of diet.

After these remarks on the causes and nature of dysentery, a disease important from its symptoms and the frequency of its occurrence, I shall endeavour to lay down cer-

tain general principles of treatment, by which the practitioner should, in some degree, be guided in his exertions to subdue it, conjointly with the employment of homœopathic agents. The *acute* form of the disease will first fall under consideration.

The sufferings, at this time, are extremely severe, as the constantly recurring desire to go to stool, the accompanying tenesmus and gripings, the mucous or bloody evacuations, with scarcely any fecal matters, pain or tenderness of the abdomen, and fever. These morbid conditions rapidly supervene on derangement of the abdominal organs indicating an attack of dysentery, and should be met at once by prompt and active measures, which, if properly enforced, will either cut short the malady, or render its course mild and free from danger.

The patient, if an adult, should be placed in a hip-bath, and should remain in it for quarter of an hour, a child for five minutes, or such time as can be conveniently borne, the temperature of the water being as high as is agreeable to the feelings. During the last five minutes in the one case, and proportionately in the other, while a large part of the body is thus immersed, the abdomen should be rubbed by the hand of the attendant; after which the patient, being put into a warm bed, fomentations should be applied as previously directed, and gentle friction every four or six hours, according to the urgency of the symptoms.* If these do not satisfactorily yield, the hip-bath should be repeated twice in the twenty-four hours.

In what way do these means operate, and what is the nature of the evils they are intended to correct? The chief of the latter is *disordered abdominal circulation*, characterised

* See page 53.

by *congestion* of the viscera, with a decided tendency to inflammation. These are the pathological conditions which exist. The hip-bath greatly excites the internal organs on which it acts. The blood is aroused to increased and more vigorous motion, the effect of which is to diminish the incipient or established congestion in them. Every step that leads to this result arrests the extension of inflammation, and lessens that which is present. The inflammation originates mainly in, and is maintained by, this state of the viscera. The fomentations and friction operate in the same manner. A perseverance in these measures will seldom fail to allay the most urgent symptoms. When the hip-bath is not at hand or cannot be procured, fomentations and friction must be employed, and, conjoined with appropriate homœopathic remedies, the disease is rarely difficult to cure. But the adjuncts which are here recommended are of the first importance, and by no other mode of treatment can the same amount of good be effected in the same time.

The practice advised by recent and high medical authorities, and adopted by the profession at large, if analysed in a physiological or philosophical spirit, scarcely seems consistent with reason or common sense.

By one distinguished writer, general and local bleeding, that is, bleeding from the arm and the application of leeches to the abdomen, is prescribed; afterwards *aperient*, cooling, and soothing remedies, and a turpentine epithem or blister to the abdomen.* Mason Good recommends the treatment of Sydenham, which was, after bleeding, giving an opiate at night, and a pretty active *purgative* in the morning, composed of rhubarb and senna.† A third regards the advantages of general blood-letting as indisputable, conjoined with *large doses of calomel and rhubarb*, and on the ground that

* Copland, *opus cit.*, vol. i. p. 717.

† *Opus cit.* vol. ii. p. 615.

dysentery consists of *inflammation* of the lining membrane of the intestines.*

Some practitioners depend entirely on large doses of calomel frequently repeated; others on smaller quantities given for the purpose of producing salivation. The profession generally are agreed as to the necessity of *bleeding* and of *purging*, in some form, in an attack of acute dysentery.

The bleeding is intended to subdue the inflammation of the intestines, and to correct the disordered circulation, which can be accomplished only by diminishing the *congestion* of the abdominal visera. This congestion, as an important practical fact, is rarely clearly apprehended by the profession. If it were, surely other means much less injurious to the system would suggest themselves to the mind, admirably calculated to relieve and ultimately to remove it. The attention, however, is fixed upon the supposed existing inflammation, which in the early stage of the disease is less than is generally imagined. It is *irritation*, conjoined with congestion, rather than acute inflammation. But, admitting that it is *inflammation*, in what light are we to regard the utility of *purgatives*, or of an active, irritating substance like calomel, one of the potent preparations of mercury? Is it rational, on the one hand, to bleed for the purpose of subduing inflammation of the intestines, and, on the other, to *stimulate* these organs,—their delicate and sensitive mucous membrane,—by purgatives, and the most energetic of them?

If the practitioner had a just conception of the anatomy and physiology of the intestines, and of the nature of their disorder at this time, he would shrink from the employment of such remedies: he would indeed be embarrassed to dis-

* *A Nosological Practice of Physic, embracing Physiology.* By GEORGE PEARSON DAWSON, M.D.

cover what useful end they could possibly serve, these organs, according to his own views being *in a state of inflammation*. If it be at all necessary to act upon them in this manner, on the supposition that bile and other matters are accumulated in them, a dose of castor oil will be equal to this object. The fomentations and friction exert an extraordinary *aperient* influence. They never fail to produce this effect by diminishing existing congestion and inflammation; and further, by imparting additional nervous power to the intestines.

In the milder forms of dysentery, the sufferings of the patient may be readily relieved by the application of the means which are here laid down. In the course of twelve hours, the symptoms will be considerably modified. The pulse will have become fuller and stronger, showing that the blood is moving with greater freedom through its numerous channels, which implies a corresponding diminution of *local congestion*; the griping pains will have become less acute, and the tenesmus less urgent. A further amelioration will be observed in the increased or more equable temperature of the body, from which it may accurately be inferred, that the whole of the internal organs are performing their several functions with greater vigour and correctness. Nevertheless, how marked soever may be the improvement, the measures in question should be steadily employed until the alvine evacuations have become natural in quantity, appearance, and consistency. When such is the case, it is clear that the digestive apparatus, and the animal system generally, are approaching the conditions of health: and indeed, until the motions are of this character, whatever may be the beneficial changes in other respects, the practitioner may rest assured, that the intestines as yet have not regained their normal functions; and hence the importance of strict attention to them until the excretions unequivocally manifest the fact.

The acute form of dysentery, when it is neither cured nor ends fatally, ordinarily passes into the chronic state of this disease, which is always exceedingly difficult to cure, and from obvious reasons. Either from the severity of the previous symptoms, or from injudicious treatment, and often from the latter circumstance, the organs involved in the derangement are *structurally*, and at times seriously, affected, and moreover the constitution is undermined. This chronic state may originate primarily, as from long residence in warm climates, and from the influence of unhealthy localities; occasionally it is the consequence of disorders of the stomach, the liver, or the bowels. Whatever may be the causes from which it arises, it is evident from the frequent, loose, and ill-conditioned evacuations, that organic mischief exists, and of a nature that will seldom satisfactorily yield to remedial agencies.

It is in part from the consideration of the evils liable to be induced from the improper treatment of dysentery in its acute stage, that I have entered at length into the investigation of the pathological or morbid states of the viscera which constitute the malady. They have been distinctly placed before the mind, the chief being the disturbed circulation *characterised by internal congestion*, on which supervenes irritation or inflammation, or either of these may in various degrees precede it; but whether cause or effect, the disease in its onward march is accompanied by the gradual *withdrawal* of blood from the extremities and surface of the body, and its consequent accumulation in the abdominal viscera. And it may further be observed, that whatever may be the symptoms to which it gives rise, or with which it is associated, the thorough correction of them will depend on the efficiency of the means in subduing this *internal congestion*,—in throwing the blood from within, outwards. Hence the practical value of the measures which are here brought under

notice, as the hip-bath, fomentations, and friction,—measures which it is scarcely possible to over-estimate when judiciously used. Their physiological action has been fully explained. It cannot, therefore, be urged against the employment of them and, implicit confidence in their efficacy, that they are the mere suggestion of empiricism. Their foundation is that of clearly established principles,—as sound and as intelligible as any connected with the healing art.

An old French physician is said to have remarked : “J'étois dogmatique à vingt-ans, observateur à trente, à quarante je fus empirique; je n'ai point de système à cinquante.” The field for observation enlarges with our knowledge, and the mental powers, quickened and sharpened by use, should always be kept in lively activity. The business of the medical practitioner is to cure, and if the system which he adopts *excludes* anything, any remedial means, which the experience of others has proved to be valuable, whatever may be the excellencies of his system, it is good only within certain, and, it may be, narrow limits.

The merit which I claim for these inquiries, the right to which will scarcely be disputed, is twofold : the *first* is an exposition of the pathological conditions of the diseases brought under consideration, or at least the broad and distinctive features of them, in a way which has not been done by any previous writer. The great desideratum in medical practice is to ascertain in what disease consists, or what is the nature of the nervous and circulatory disturbances by which it is manifested. The nervous and circulatory systems are those on which the practitioner has to act in his efforts to effect a cure ; and in consequence, the importance of being thoroughly acquainted with the mode and degree of their derangement.

Secondly, in the treatment of a class of remedies which

are here termed *adjuncts*, their physiological action is fully explained. It is shown in what way they affect the animal frame, that is, the nervous and circulatory systems; and, therefore, it is not difficult to discover in what disorders they may be employed with unquestionable advantage. They will probably fail to make much impression on the minds of others, *because they are simple and easy to apply*. They will ultimately be appreciated. To understand and set a just value on what is *simple* is often evidence of profound knowledge.

The natural tendency of science in its progress is to simplify. Ignorance is prolific in expedients, in blind attempts to effect desired ends. It would indeed be singularly unphilosophical to object to the use of adjuvants, in the endeavour to control disease, on the ground of their simplicity; and not less so, in my opinion, on their supposed want of power to effect good. It is pleasing to observe that the medical profession generally are becoming simpler and less heroic in their treatment.

§ 13. *The Application of Friction in Cases of Jaundice.*

Independently of the extraordinary utility of friction and of other adjuvants in the treatment of this disease,—a sufficient reason for entering upon the consideration of it,—the physiology of the liver, and the causes and mode of its disturbance, to which jaundice is mainly attributable, have been objects of special study from my earliest researches into the functions of life. Several of my works are evidence of the fact.* I am, therefore, in some degree, prepared to inves-

* *An Experimental Inquiry into the Laws of Life*. 1829. *The Physiology of the Fœtus, Liver, and Spleen*. 1831. *The Constitution of the Animal Creation as expressed in Structural Appendages*. 1857. In the last-named work the functions of the liver are discussed at considerable length.

tigate the pathological conditions of this organ, which is always more or less disordered in every important affection of the animal system.

Common as jaundice is, and particularly the slighter forms of it, there is scarcely any disease that is less perfectly understood, and none concerning which the treatment is more discrepant. No two writers agree either as to its nature or treatment. In corroboration of this assertion, one of the latest and highest authorities on medical subjects observes: "There are few diseases, the nature and morbid relations of which have occasioned greater diversity of opinions, than jaundice. By some it has been viewed as a symptom of derangement, or of organic lesion, of the biliary apparatus, more immediately dependent upon obstructed discharge, and upon absorption of bile. Others have considered it as independent of absorption of this secretion, and as the result of a morbid state of the capillary circulation."* This able writer himself has not thrown much additional light on the nature of the malady, and certainly not on the mode of its origin, occurring, which it does, under a wide diversity of circumstances. Considering his extensive physiological attainments, a more felicitous exposition of these matters was to be expected from him. It is physiology alone that can aid us in this important, but not difficult inquiry.

Jaundice is produced by very different causes. It is often the consequence of derangement of the digestive organs, of mental emotions, of the suppression of natural and of long-existing discharges, as of the menses, and of hemorrhoids; of the retrocession of gout and rheumatism, that is these diseases leaving the parts they had previously affected and attacking the liver, and so disordering its functions as to give rise to jaundice: this likewise results from injuries and

* Copland, *opus cit.*, vol. ii. p. 296.

affections of the brain, from cold in the feet, from drinking cold water when the body is greatly heated; and is occasionally observed in gastric, bilious and remittent fevers, and ague: it also arises from gall-stones impacted in the gall-bladder, or in the ducts which convey the bile from the liver to the gall-bladder, or from this into the first intestine, the duodenum: another cause is mentioned by writers, and regarded as one of frequent occurrence, viz., *spasm* of the *biliary-ducts*, by which the free flow of bile is prevented. The reasons assigned for the existence of such a state of the ducts are anything but satisfactory. No one has ever detected the spasmodic contraction of them. This is assumed on grounds which will not bear strict analysis, as will subsequently be shown.

It is interesting and instructive to note the diversity of the causes in which jaundice originates, and the very different conditions of the body with which it is associated. With the exception of *physical* obstacles to the passage of bile into the first intestine, as from the presence of gall-stones, either in the gall-bladder or the ducts, it will not be difficult to prove, which has not hitherto been attempted by any writer, that these various causes, so unlike in character, and in the influence which they exert, nevertheless so affect the nervous and circulatory systems, as to give rise to one pathological or disturbed condition in common, viz., *congestion of the liver* to which jaundice is to be ascribed.

In the following observations the object will be to establish the soundness of this conclusion, showing in what way each particular cause acts on the vital powers generally. It is by such a procedure only that the inquiry can possibly lead to the development of just views on this subject, and of course to the suggestion of correct practical measures, valuable from their simplicity and efficiency in the treatment of the different forms of the disease. It will be evident from

.

the investigation, that to understand this, to seize clearly its distinctive features, it is imperatively necessary that we should be familiar with the laws which govern the functions of life in health.

The symptoms of jaundice are yellowness of the eyes and skin, at times passing into a yellowish green; the urine is of a deep saffron colour, depositing a thick brick-like sediment; the stools are white or clayey in appearance, the bowels constipated, or if otherwise, the motions are scanty; the pulse, unless marked inflammatory symptoms are present, is natural as to frequency, though it is sometimes below the natural standard; the flow of bile from the liver, the gall-bladder, or biliary ducts, is interrupted.

This description does not apply to all cases of jaundice. The alvine evacuations are at times of a bilious character throughout the disease; but only when this is to be traced to derangement of the liver, and not to any local affection of the gall-bladder or biliary ducts.

Jaundice has been divided by some writers into the five following species: 1. Biliary jaundice. 2. Gall-stone jaundice. 3. Spasmodic jaundice. 4. Hepatic jaundice. 5. The jaundice of infants.*

It will be convenient to examine the disease under these several heads, though I shall endeavour to show that some of the designations are defective, are far from conveying just ideas as to the nature of the existing disorder.

The first species, *Biliary jaundice*, is imagined to depend on an *inspissated* or thickened state of the bile in the gall-bladder or ducts; in consequence of which it cannot flow into the intestines. Hence it becomes an obstruction to the escape of bile from the liver, the result of which is the absorption of it and the external phenomena of jaundice.

* Mason Good, *opus cit.*, vol. i. p. 410.

That the bile may, in the situations mentioned, undergo this change will not be denied. It may, however, be affirmed without hesitation, that this only very seldom happens. There are no symptoms which unequivocally prove the fact, except the evacuation of bile of this quality either by the mouth or from the bowels, which is a rare occurrence. Wanting this evidence the supposition is purely conjectural.

It is stated by Mason Good, that this form of disease, in many instances, "commences slowly and insidiously; there is felt a general restlessness, diminution of appetite, disturbed sleep at night, and disinclination for exertion of any kind;" and further, that it is found most generally in the autumn. It is certainly not easy to conceive how these symptoms can be regarded as indications that the bile is *inspissated*. In nine cases out of ten they are indications of a *primary disturbance of the functions of the liver*; and an accurate investigation of the affection would establish the soundness of this opinion. It is in the autumn that this organ is peculiarly susceptible of derangement as was shown when treating of dysentery. From the frequently unfavourable condition of the atmosphere at this season, taking into account the state of the animal system from the previous influence of heat, the surface of the body is chilled, and the transpiration in consequence is interrupted, the inevitable effect of which is to throw the blood from without, *inwards*; and in none of the viscera will it, or indeed can it, accumulate to the same extent as in the liver. From the size, structure, and intimate association of the latter with the internal organs, it is singularly adapted to receive it, and, within certain limits, to retain it without any immediately prejudicial result to the animal economy.

It was from the contemplation of this fact, which is indisputable, that I was led in my early investigations into

the functions of the liver,* to consider this as exercising another office besides the secretion of bile, viz.: that of a *diverticulum*, by which is to be understood here an organ designed by nature to be a receptacle for blood, when, from the disturbed balance of the circulation, a large portion of it being no longer maintained in motion is determined to the abdominal viscera. It is clear that it must go somewhere, and remain wholly or comparatively at rest until the awakened efforts of the vital powers have corrected this disordered circulatory condition, *which co-exists with every disease characterised by depression.*

According to the views which were developed in my early researches, the *liver* and *spleen* were temporary *reservoirs* under the circumstances stated; and if the views be justly founded greatly to the advantage of the animal system. The temporary excess of blood which they receive will be a relief to more vital organs.

The inspissation of the bile in the gall-bladder or ducts will occasionally occur, but in my opinion it is strangely unphilosophical to suppose that any atmospheric circumstances will give rise to this particular condition, apart from other and extensive derangements of the hepatic system. External agencies are not so circumscribed in their effects, yet this notion is generally entertained; and pathologists have displayed no mean ingenuity in the endeavour to account for the inspissation of the bile. It has been imagined to arise "from an absorption of its aqueous or thinner parts by the lymphatics of the ducts themselves, or of the gall-bladder, from an augmented secretion of the albumen; or, as Berzelius considers it, the mucus of the gall-bladder dissolved in the bile; and from too viscid a texture of the bile in its secretion in the liver."†

* *The Physiology of the Fœtus, Liver, and Spleen.*

† Mason Good, vol. i. p. 411.

The real causes of this altered state of the biliary secretion have been overlooked in the inquiry. Hence the limited and incorrect ideas prevailing concerning this *species* of jaundice. The nature of this is primarily the disturbed functions of the liver originating in the *congestion* of it. It becomes inactive and incapable of secreting bile of a healthy quality; therefore, that which is conveyed into the gall-bladder and the ducts is vitiated in its properties,—is unfit to minister to the purposes of life. The nervous system, at the same time, is languid or depressed, so that neither the liver, the gall-bladder, nor the ducts have their ordinary vital *contractility*, by which the bile is propelled along its course to the duodenum; consequently it *stagnates* in its intermediate passages. The patient, generally, previous to the manifestation of jaundice, fails in his appetite, is disinclined to bodily exertion, so that additional influences come into play still further deteriorating the constitution of the bile, and impeding its transmission to the intestines. The altered character of it, conjoined with its detention in the gall-bladder and ducts, is the cause of its *inspissation*. This species of jaundice properly belongs to the hepatic variety.

The next species is *gall-stone jaundice*. This arises from the presence of gall-stones either in the gall-bladder or ducts. They are most frequently found in the cystic duct, next in the ductus communis choledochus, and then in the hepatic duct. The cause of their production it is clearly shown is the crystallization of the elements of the bile; and as far as my observations extend there are two classes of persons which would appear most liable to them: individuals who habitually indulge in spirituous potations; and those of indolent habits, or who take little of out-door exercise. In both cases there are causes sufficient to account for the *vitiated* properties of the bile, without which

gall-stones would not be formed. Stimulants constantly taken greatly alter the constitution of this fluid, as they exert a powerful and injurious influence on the functions of the liver. Persons who lead a sedentary life or who confine themselves principally to the house, have none of the fluids of the body in a thoroughly healthy condition. Nature has her laws to secure this, and those who infringe them inevitably pay the penalty in some form. One of the results is an impure state of the blood, its deficiency of oxygen,—the life-imparting agent of the animal economy,—the stimulus to all vital action. Wanting this, in its due proportion, the circulation becomes feeble, and is imperfectly performed, as is seen in the *congestion* of the liver and other viscera. The ailments of such persons are generally traceable to the derangement of these organs the leading characteristic of which is inactivity. It will, therefore, readily be supposed that, under these circumstances, the bile secreted will be vitiated in quality, and will be slowly and languidly urged along its course to the intestines,—the two conditions which are favourable, and necessary, to the formation of gall-stones.

The presence of these in the biliary ducts is one of the occasional causes of jaundice. The bile is arrested in its passage to the duodenum; and, consequently, the liver not being able to get quit of it in the usual way, it is absorbed and circulates with the blood producing the well-known indications of jaundice.

The symptoms of the disease, having this origin, are ordinarily particularly well marked. The biliary ducts are constantly making efforts to relieve themselves of the gall-stones, or such efforts are reasonably to be inferred from the extreme pain experienced in the hypogastric region, that is the middle part of the lower region of the abdomen. The patient at times writhes in inexpressible and insupport-

able agony. A few years ago I was in attendance upon a lady suffering from this affection, and so acute and distressing was the pain, that she repeatedly and earnestly prayed for death, and at last became perfectly *insane*, and remained in this state nearly twenty-four hours, during which period the gall-stones passed and were discharged with the *fæces*.

I have at this moment a case under my care, though not of jaundice, it will probably terminate in this if the exciting cause of the symptoms is not removed. The case is that of a lady about forty years of age, inclined to corpulency, and who has taken little of out-door exercise beyond what the carriage afforded. A fortnight ago she became ill, complaining of the ordinary symptoms of indigestion, as a dry mouth in the morning, slight flatulence, an uneasy sensation at the stomach, thirst, want of appetite, and general weakness. The debility and sickly expression of the countenance were particularly striking, and was embarrassing from being out of all proportion to the apparent cause,—the functional derangement of the digestive organs. During the first four or five days from the treatment pursued the tongue became cleaner, the mouth less clammy, the thirst was diminished, and the general appearance of the patient was improved, but by no means to a satisfactory extent. When it was reasonable to hope that further amelioration would follow, the patient was suddenly seized with excessively cold feet, awful shivering,—using the expression of the patient,—vomiting and distressing retching, which continued sometimes for three hours without intermission,—the countenance faithfully portrayed the acute sufferings experienced. Great exhaustion succeeded the attack, which has now occurred eight times, at intervals of twenty-four and forty-eight hours. After the three first seizures the eyes and face had a bilious aspect, but not approximating to the deep yellow hue of jaundice; after the subsequent attacks the

countenance was extremely flushed, and the pulse was so small and feeble that it was at times difficult to detect it. It afterwards became natural.

From the symptoms which are here given there can scarcely be a doubt that they originate in calculi or gall-stones in the gall-bladder, or in some part of the biliary ducts. They may be present in both. The symptoms would indicate an effort of the biliary apparatus to expel these foreign bodies.*

Writers, in treating of jaundice arising from obstruction in the biliary ducts to the passage of bile, from whatever cause, state that in this case it *regurgitates* or goes back into the liver. This is scarcely strictly correct. The liver is at this time labouring, and in vain, to get quit of the bile in the *direction* of the ducts; and, therefore, the contents of these will not readily re-enter this viscus; nor, in fact, do they, as is occasionally evident from the sudden and copious discharge of bile either by the mouth or downwards. Had not this been accumulated in the gall-bladder and the biliary ducts it could not have flowed in such abundance. It would have been an impossibility. It must be stored up to produce this result. Jaundice is the consequence of bile which cannot escape *from* the liver, and

* This case possesses considerable interest. The patient has now been ill three weeks presenting the symptoms which are described above. There are no indications of jaundice: the bowels readily act, and the evacuations occasionally more than ordinarily abound in bile, showing clearly that there is no obstruction to the passage of it. From this fact, my opinion is that the gall-stones are in the gall-bladder, and that the sufferings of the patient, which occur usually every forty-eight hours, are to be ascribed to the efforts made by nature to pass them along the *cystic duct*, but ineffectually. As they do not succeed in finding an issue, they fall back into the gall-bladder, and then the patient becomes easy, and is comfortable in the interval of the attacks. On the cessation of these the pulse is perfectly natural, save only a shade weaker, but natural as to frequency.

not of that which *re-enters* it. During the derangement of this organ it continues to be secreted, and it would appear in considerable quantity judging from the deepened hue of the skin and the character of the urine.

The next species of jaundice, in the order laid down, which comes under consideration, is the *Spasmodic*, the investigation of which will be found not less interesting than instructive. On no medical subject, where correct views are of vital importance as a guide to practice, does there appear to me a greater amount of fallacies or of gratuitous assumptions, than in reference to this species of jaundice. Writers, to the present day, have implicitly adopted the doctrines of their predecessors, as if the facts on which they rested were so obvious and indisputable, that he indeed would be bold and reckless who dared to question their accuracy.

The doctrine of spasms, as accounting for many diseases, is of old date, and though it has been much damaged and exploded by the establishment of the more just and enlightened pathological principles of modern times, it yet possesses a degree of vitality and influence which it certainly does not merit on scientific grounds.

The course of the bile is occasionally arrested, giving rise to jaundice, by sudden mental affections, as fright, terror, anger, jealousy: the disease is gradually induced by a desponding or depressed state of the mind, and likewise by hysteria; and it is contended by causing *spasm of the gall-ducts* by which the passage of the bile is interrupted from the liver to the duodenum. This opinion is supported by high authorities, as Cullen, Powell, Andral, Jourdan, Mason Good, Copland, and others. The occurrence of spasm of the ducts has been denied by some writers, but they fail to give a rational explanation of the phenomena which are

accounted for on the supposed existence of this state of the biliary ducts.

It is here important to observe, on entering on this inquiry, that this *spasm* of the ducts, of which such great use is made in the attempted elucidation of the origin and nature of morbid action, is not a fact based on clearly ascertained observation. It has not been detected by the pathologist. He assumes it to exist *as a natural consequence of disturbed nervous action* arising from various mental affections, as the emotions alluded to. Under these circumstances he finds that the flow of bile is interrupted, and he at once jumps to the conclusion, that the phenomenon is explicable only on the spasm of the gall-ducts. I shall endeavour to show, which has not hitherto been done by those opposed to the prevailing doctrine, that the whole train of morbid effects admits of easy explanation on physiological and pathological principles.

All violent mental emotions, and certain diseases, as hysteria and epilepsy, exert a powerful influence on the circulation, greatly modifying, according to the nature and severity of them, *the distribution of the blood*. This is one of their evident and indisputable effects. According to Copland, they “frequently occasion a most painful and oppressive sensation at the epigastrium, faintness or difficulty of respiration, and *paleness* of the countenance.”* This, as far as it goes, is a truthful description. Emotion is seated in and primarily acts upon nervous matter, but the action is not confined to it; or, in other words, the effects which it produces are not limited to changes in the condition of the nervous tissue; nor indeed to the extension of it to the muscular fibres of the gall-ducts, inducing in the latter, on the gratuitous assumptions of writers, *spasm*. They conclude

* *Opus cit.*, vol. ii. p. 301.

that it is this which obstructs the passage of bile into the intestines, and on no other grounds than that *the exciting causes are mental emotions or nervous affections*. They do not endeavour to ascertain what are the modifications occasioned by them in the distribution of the blood. They stop short of this important investigation, arrested in their researches by this imagined spasm. They accept this as a reality, as a thing proved, when in fact it is altogether conjectural.

As an illustration of the physiological action of strong emotions on the animal economy, followed by jaundice, it is almost a matter of indifference what passion be selected, if extreme in its manifestations. Suppose *fright* be taken as an example. The countenance displays the emotion in its distorted and expressive features,—the hair stands somewhat erect,—the face has a death-like paleness,—the limbs falter and tremble,—a cold or chilling feeling runs through the frame,—respiration for the moment is interrupted, afterwards it is quick, irregular, and difficult,—the heart palpitates, or its contractions are violent, yet the pulse, so far from being full and strong, *is feeble, and exceedingly frequent*.

When the cause of the fright no longer exists, What are the conditions of the animal system? The face is still pale and otherwise unnatural in its expression: the pulse continues weak and quick, and the breathing is embarrassed.

Is it not evident from the phenomena which fall under observation, that a remarkable change has taken place in the character of the circulation? The blood, which previous to the emotional disturbance was on the surface of the body, and in vigorous motion in the extremities, is withdrawn from the former, and is transmitted to the latter in a greatly diminished current. These facts will not be questioned. They do not admit of doubt. They are indeed necessary truths, and can scarcely be less obvious to the non-profes-

sional than the professional mind. The question immediately arises, What has become of the blood that has undergone this extraordinary change in its distribution? It has not quitted the body, and yet it has gone somewhere,—to regions where it was not before. It has *retreated* to the thoracic and abdominal viscera, principally to the latter; and among these, in an especial degree, the liver. It is accumulated and retained in this organ from three causes, which it is important to keep in view in order to account for the aggravated *congestion* of it.

1. When the blood is suddenly withdrawn, or, as it were driven from the extremities and surface of the body, a portion locates itself in this viscus. As already remarked, it must go somewhere, and the liver, from its connection with the large abdominal veins, may be said to have peculiar facilities or provisions for receiving it: it does receive it.

2. The depression of the nervous system, which is strikingly characteristic of the emotion, is felt by every nerve of the body, whatever may be the functions to which it contributes: hence the nerves of the liver, *from their loss of vital power*, cannot so act on the capillaries of the organ as to enable them to convey *from* it, as in health, the blood which is brought by the arteries. The difference between what enters the liver and what is removed from it will be an exact measure of the *congestion* induced by this cause.

3. Such general depression of the functions of life never occurs without leading to the accumulation of blood in the large abdominal veins. The presence of it in excess in these vessels creates impediments to its issue *from* the liver; consequently it is an influential circumstance tending to aggravate and maintain the serious congestion of this viscus.

The foregoing observations have this pertinent application: they establish the fact, that fright,—and the same may be said of other violent emotions by which the circulation is

similarly disturbed, by causing the *withdrawal* of blood from the extremities and surface of the body, and necessarily throwing a considerable portion of this upon the liver,—so disorders the functions of it that jaundice is the result. This, as previously stated, has been ascribed to *spasm* of the gall-ducts, on no other ground than that the exciting cause was passion or a nervous affection. The advocates of the doctrine never thought of endeavouring to determine in what way, or in what degree, the blood was modified in its distribution by causes of this kind.

The next step in the inquiry is to show how extreme congestion of the liver is the occasion of jaundice, which has not, so far as my researches extend, been hitherto explicitly explained. In the natural condition of the organ, the minute arteries and veins, and the numerous small biliary ducts which pervade and largely compose its structure, have *space* for free action,—for the exercise of their respective functions. It is clear that to perform these they must not be unduly *pressed* upon from without, from changes in the condition of the hepatic tissue ; or if so influenced effects will indicate the fact. When the liver is greatly congested, whether from mental emotions or any other cause, the small biliary ducts which collect and carry the bile in the direction of the hepatic duct, are incapacitated for their office. The blood which fills and distends the blood-vessels around and in connection with them prevents the escape of the bile outwardly, that is, in the direction of the bowels ; and hence the absorption and circulation of it throughout the body giving rise to the phenomena of jaundice.

This explanation of the origin of the disease from congestion of the liver, is very different from that which is given by Dr Copland. He, in treating of the same subject, observes : “ The blood circulates with difficulty through the liver ; and the bile which is formed, generally in great abundance, owing

to the highly venous state of the blood, often is retarded and accumulated in the ducts, during its course to the gall-bladder or duodenum. Owing to this retardation or obstruction, a portion of it is absorbed, probably by the radicles of the hepatic veins, as they pass out of the granular structure, where the biliary secretion is performed, and the ducts take their origin."* The bile will be absorbed by the *veins generally* of the liver, and from the cause assigned,—*the obstructions to its flow from within, outwards.*

In the foregoing remarks it has been my object to prove, that jaundice, arising from violent mental emotions, is not attributable, as is all but universally contended for by writers, to *spasm* of the gall-ducts, but to *congestion* of the liver consequent on the disturbance of the circulation,—a fact which had in no degree awakened their attention. The exposition of such a fallacy is not a matter of trifling moment. It has an important practical application. How different must be the treatment which is prescribed to overcome *spasm* and that which is employed to correct *congestion*! The one is an exceedingly limited local affection,—the contraction of the gall-ducts:—the other can scarcely be considered local, for so far from being confined to the liver it implicates more or less the whole of the viscera.

The depressing passions, without exception, disorder the functions of the liver. Though not violent in their manifestations, their injurious influence is apparent in the diminished vigour of the circulation, in the deterioration of the properties of the blood, and in the sallow, bilious, or jaundiced expression of the countenance. The congestion of the organ obstructs the escape of the bile through its natural channels, and though to a less extent than when jaundice is the result, it is absorbed and circulated with the blood, presenting that

* *Opus cit.*, vol. ii. p. 300.

sickly or unhealthy appearance which is evidence of its presence in the sanguiferous system.

The following are the remarks of a very high authority, and on that ground are worthy of notice, though they are a further illustration of the fact, that pathologists, in studying the effects of emotions on the abdominal viscera, but particularly the *liver*, have altogether overlooked the disturbance of the circulation consequent upon these mental states, modifying greatly the distribution of the blood: "No previous disease whatever," observes Andral, "but a strong mental emotion, a great fright, a violent fit of anger, etc. The appearance of jaundice is then instantaneous. What is the cause of it then? Has the mental emotion occasioned duodenitis? (inflammation of the duodenum or first intestine). That, to say the least of it, is extremely doubtful; and I should rather feel inclined to admit that the cause of jaundice should then be placed in the *nervous plexus*, so remarkable both for its size and for its double origin in the nervous centres of animal and organic life, which enters into the liver with the vessels, and with them is distributed through the organ. Who knows whether the sudden modification which this plexus may undergo in its functions, after a mental impression, may not have a powerful influence on the secretion of bile?"* The writer supposes that the secretion of it is *increased*. Cheerful or exhilarating emotions increase all the secretions of the body by conveying to their respective organs a more liberal current of nervous energy; but it would certainly be unphilosophical to ascribe such an effect to violent depressing passions, as fright, fear, and other emotions of the same class; and all emotions, when *extreme*, even exquisite joy and pleasure, exert a *depressing*

* *The Clinique Medical*. By G. ANDRAL, Professor to the Medical Faculty of Paris. Trans. by D. SPILLAN, M.D.

influence on the nervous system, and occasionally cause instantaneous death. The nervous plexus to which the writer alludes will be affected, and so will every nerve of the body. The nervous disturbance is not confined to any particular plexus. The *extreme* of anger is often manifested by a death-like paleness: slighter degrees of it usually flush the countenance; but in this form it never gives rise to jaundice: it does in its unbridled violence.

Emotions of the kind here contemplated exciting jaundice, depress the nerves of the liver, and of course those of other organs. This depression enfeebles, and to some extent arrests the action of the capillaries of the liver, and will equally affect the biliary ducts whose office it is to convey the bile *from* this viscus. Congestion and inactivity of its normal functions are the inevitable results. And it is under these circumstances that the bile, not having its natural issue, is absorbed by the blood-vessels of the liver and carried into the general circulation.

Jaundice frequently arises from disorder of the digestive organs. In many cases the derangement is so gradual in its progress, that the individual is sensible of no particular ailment. The mouth for some time has usually been dry or clammy in a morning on awaking, the tongue slightly furred, the urine turbid and depositing a sediment; but beyond these symptoms there has been little or nothing to excite and arrest attention. In some cases the appetite is impaired. The bowels have ordinarily a tendency to constipation.

The individual at length breaks down, complains perhaps of lassitude, faintness, and sometimes of sickness. When visited, the nature of his disorder is obvious in the yellow tinge of the white of the eye, and in a less degree in that of the countenance. In two or three days there are the unequivocal external symptoms of jaundice. It is one of those

diseases which cannot be mistaken: the immediate cause of it may be. I have had, within the last six weeks, two cases under my care differing greatly in their symptoms. One was that of a person about thirty years of age, of active habits, and whose occupation is principally out of doors. His motions were scanty, but abounded in bile, and occurred daily without the aid of aperient remedies. The urine appeared to be almost pure bile, and deposited an exceedingly thick sediment, and continued of this character for more than a week, showing, in my opinion, a vast accumulation of bile in the liver and the biliary apparatus. The patient had no pain, sickness, nor fever. The pulse was natural and the appetite *unimpaired*. Friction and fomentations were steadily employed. In little more than a fortnight he resumed his usual pursuits and required no further treatment.

The other case was that of a person forty years of age, of a phlegmatic constitution, and somewhat intemperate in his habits. The bowels were torpid, and when moved the alvine evacuations were white or clayey in appearance; the urine was less of a deep saffron colour than in the last case, but in other respects the same. The patient had more or less constant pain, at times rather acute, in the region of the liver. The mouth was dry, clammy, and the tongue was considerably furred. There was little desire for food. The patient was able to resume his occupation in three weeks. The external applications were friction and fomentations. The only homœopathic remedies which were used, in both cases, were *mercurius*, *aconite*, and *ippecacuanha*.

Jaundice is occasionally observed to follow an attack of hysteria, epilepsy, and hysteralgia. The last is a severe nervous affection of the uterine organs. The occurrence of jaundice, under these circumstances, has been ascribed by writers to *spasm* of the gall-ducts, and from no other cause than that the diseases themselves were *nervous*,—seated in

the nervous system. Every disturbance of this, according to their notions, giving rise to a particular class of morbid effects, must result in *spasm* of the biliary ducts. The advocates of this doctrine never imagined that extraordinary changes in the distribution of the blood could be influential in the production of the phenomena in question. It is scarcely necessary to remark, that in a severe attack of hysteria and of epilepsy, from the contortions and violent actions of the body, the circulation is not less disordered than the nervous system itself: and if, previous to the seizure, the liver and the abdominal viscera generally, which will sometimes be the case, are already in a state of congestion, the aggravation of this by the distressing diseases in question, will, therefore, be a circumstance calculated to develop jaundice. There is no need to seek the cause of it in *spasm* of the gall-ducts, there being quite sufficient derangement in the distribution of the blood, both at the time of the attack and subsequently, to account for it.

In the further prosecution of the inquiry it will be clearly shown, that in numerous other instances in which jaundice occurs, the cause will be found in *congestion* of the liver. It is of great practical importance to establish this fact, from its intimate relations to the efficient treatment of the affection. This is sometimes *endemic*, attacking persons in a particular locality, from the unhealthiness of it, being low and humid, and the heat of the season acting unfavourably on these conditions. It is not difficult to trace the mode in which these prejudicially influence the animal economy. The atmosphere, from its moisture, and otherwise modified in its constitution by exhalations from the soil, is unfitted to respond to the natural demands of respiration. The blood in the lungs in consequence fails to undergo its proper chemical changes. It is not thoroughly oxygenated;—the surplus *carbon* of the system does not meet in the

lungs with a sufficiency of oxygen with which to combine ; and, therefore, a portion remains in circulation to the injury of the vital functions. The arterial fluid is too *venous* in its character,—defective in stimulating properties. One pathological result invariably follows this state of things : The motion of the blood and the equability of its distribution throughout the body are in the ratio of the *vital properties which distinguish it*. Whenever these fall below the requirements of animal life, the blood, being no longer in vigorous circulation, *accumulates, as a matter of necessity, in the abdominal viscera*. It is not transmitted, as in health, to the extremities and the cutaneous surface ; consequently, it goes from *without to within*. It has here a resting-place, and where does it find this ? In the liver and the large venous trunks. There are no other organs, save the spleen, where it can be in repose without serious detriment to the animal system or indeed a fatal issue. The evidence of this *congestion* is the jaundice which appears. Nature struggles, and ineffectually, to get quit of the burden which oppresses her ; and the manifestation of this form of disease is evidence of her difficulties.

Jaundice is likewise occasionally observed in ague, which formerly, in the marshy districts of this country, was *endemic* ; and even now, though draining has greatly improved the state of the soil and of the atmosphere, it is not uncommon. The views developed in reference to the occurrence of jaundice, under similar circumstances, apply equally in this case.

There are other conditions of the animal system which at times give rise to jaundice. It is sometimes the consequence of the sudden cessation and continued interruption of menstruation ; and also when, in the course of years, it permanently declines. The periodical activity of the uterine functions is designed by nature to relieve the body of superfluous

substances the chief of which is *carbon*. This, as I have endeavoured to prove in a recent work,* has not the same facilities for escape, or the same means of *external* appropriation to the advantage of the animal economy, in the female as in the male. Hence, when menstruation is arrested, and especially in those of vigorous constitution or of plethoric habit, the circulatory system becomes seriously deranged. *The blood has an excess of carbon*, and the effects of this are seen in the dingy or bilious aspect of the skin; the pulse is usually quicker, but smaller than natural; the digestive organs are always more or less disordered; the appetite is variable, the bowels constipated, the urine sometimes copious and pale, but not unfrequently high-coloured and turbid; the abdomen is distended and tympanitic. From the commencement of these symptoms, the liver, and other abdominal viscera, are the seat of *congestion*,—are oppressed by a surplus of venous blood,—and this goes on, if not corrected, augmenting with the aggravation of the vital disturbance until at length jaundice or some other form of disease manifests itself.

When the functions of the womb are ceasing or have ceased, in the natural course of nature, the animal system has to adapt itself to a new state of things. Every organ is modified in its condition. It has to assume new vital arrangements and associations which are not always easily accomplished. The difficulty of the adjustment is displayed in a variety of morbid phenomena, as nervous affections, derangement of the digestive organs, and occasionally scirrhus or cancerous disease of the breasts or uterus. Jaundice is one of the results of the efforts of the animal system, at this time, to right itself.

* *The Constitution of the Animal Creation, as expressed in Structural Appendages.* London: John Churchill. 1857.

A learned writer, in treating of this disease, occurring in females under the circumstances stated, observes: "There is also very commonly, in those who are subject to it, a sallowness of the skin, indicative of *irritability and increased action of the liver*, and of a larger regurgitation of bile into the blood-vessels than is necessary for the purpose of health."* The same views are advocated by other authorities: and in the hands of some of them this irritability becomes *inflammation*, or is regarded in this light though there is no pain in the region of the liver, nor tenderness felt on pressure. Independently of this irritability or inflammation, it is difficult, according to their ideas, to account for this sallowness of the skin deepening more or less into jaundice. The difficulty arises from their overlooking the *congestion* of the liver, and their failing to perceive how this affects the biliary secretion and its ducts in the parenchyma or substance of this viscus. This is not, as contended by them, under the circumstances which are here contemplated, *increased* in its action pouring out an excess of bile. The true explanation, in my opinion, is, that that which is secreted, from the congestion and consequent inactivity of the liver, is retarded, and in part prevented from escaping from this organ in the *direction* of the gall-ducts terminating in the duodenum. The sallowness of the skin is the consequence of the absorption of that which is thus interrupted: it is taken up by the blood-vessels, and in combination with the blood flows throughout the body.

In corroboration of the soundness of this pathological doctrine it may be stated, that in females, and in the delicate of the other sex, who, from derangement of the vital powers acquire this sallow or bilious appearance, the bowels are usually torpid, are moved irregularly and with difficulty. If

* Mason Good, *opus cit.*, vol. i. p. 416.

the secretion of bile was increased, as is generally asserted, it is reasonable to suppose that a portion of the surplus would flow into the intestines, which is not the case, otherwise they would possess much greater activity. The want of this is mainly to be ascribed to a deficiency of bile in the alimentary canal.

Injuries and certain diseases of the brain have been observed to give rise to jaundice; nor is this at all extraordinary when the influence of this organ on the animal system is taken into consideration. Whenever it is so far affected, whether by external or internal causes, as to be incapable of exercising its natural functions, as one of the great nervous centres in connection with the rest of the nervous system, which occurs sometimes from congestion, at other times from *pressure* upon it, the circulation generally is depressed. The pulse becomes slow and languid showing that the distribution of the blood is greatly modified. The change induced is characterised by the accumulation of it in the abdominal viscera, and, from reasons previously assigned, especially in the liver and the large venous trunks.

The accuracy of these facts will not be questioned by those who have attentively studied the subject. It is, therefore, evident that, as in the foregoing examples, jaundice arises from the same morbid condition,—*aggravated congestion of the liver*.

This disease is occasionally the consequence of the sudden suppression of hemorrhoids or piles. The amount of blood which they discharge daily, or every few days, may at times appear too insignificant to lead to any important result on the interruption to its escape. The vital consideration is not the *quantity* which is eliminated or thrown off, *but the pathological relation of this quantity to the existing state of the circulatory system*. I will endeavour to explain in simple and perspicuous language what this relation implies.

Hemorrhoids occur in very different states of the animal system; but when serious mischief arises from the *sudden* suppression of them, it is ordinarily, if not always, in those of full or plethoric habit. The production of blood has gone on until it has not only exceeded the requirements of the body, but the means which this possesses of disposing of it by the exercise of its normal actions. When such is the case the surplus or unnecessary blood accumulates more or less in the internal veins generally, but particularly in those which readily admit of distention from their situation and the functions of the organs with which they are directly connected. The rectum, the last intestine, from its position and the nature of its relations to contiguous structures favours the accumulation of blood in its veins; and hence that form of disease which is called piles. The presence of them is evidence of the *oppressed* condition of these vessels: they are surcharged with blood. For a time their capacity is increased to receive it, or in other words they are distended; but nevertheless, while they retain it, they give rise to great pain and inconvenience. When the distention can no longer be borne the veins are ruptured and the blood escapes, in such quantities, and at such periods, as the prevailing necessities of the local structures or of the animal system at large demand.

When bleeding piles are established, in constitutions such as are here contemplated, abounding in blood, either from the gross indulgence of the appetite or from indolence, it is never prudent nor safe to arrest the discharge suddenly. Though the quantity, which may be thrown off either daily or at longer intervals, may be small, and appear insignificant, it is most important in relation to the existing condition of the blood-vessels of the abdominal viscera generally. The disease is not an affection altogether confined to the hemorrhoidal or anal veins; but, on the contrary, ordinarily

indicates a congested or oppressed state of the venous system of the greater part, if not of the whole, of the internal organs. The small amount of blood which escapes from the anal veins, in the case of bleeding piles, is a relief to the internal veins at large,—it allows them to continue their functions,—though at this time they are very imperfectly performed. When the discharge is suddenly stopped, whether by art or otherwise, the liver, among other organs, suffers. It was previously in an unhealthy condition, oppressed with surplus blood, and the congestion of it is further and now greatly aggravated; and as evidence of the fact *jaundice* is occasionally the consequence. The occurrence of this disease is an additional illustration of the correctness of the pathological views which have been developed in reference to it. They prove that, how various soever may be the exciting causes, with the exception of gall-stones in the gall-bladder or ducts, or other disease of them impeding or interrupting the flow of bile, jaundice originates in one common derangement of the liver, viz., *the excessive congestion of it*.

To the non-professional mind it may seem strange that serious consequences should occasionally follow the sudden suppression of hemorrhoids or piles, the loss of blood being ordinarily small in amount, probably being merely a few drops at a time and this only every two or three days. The quantity is certainly insignificant, but not in relation to the existing state of the abdominal veins, which in many cases of this kind are suffering from undue congestion. The escape of a few drops enables them to carry on their functions. To interrupt this limited but established discharge, may cause, and has frequently occasioned, apoplexy and diseases of the heart, lungs, liver, and other organs. The prudent course to pursue is to effect a cure gradually, and

in such a way that the animal system is prepared for the change.

In certain head affections the importance of the flow of half-a-dozen drops of blood from the nose is often displayed in a remarkable manner. A person is perhaps afflicted with a racking headache, or symptoms that would appear to indicate an attack of apoplexy, a few drops of blood escape from the nostrils and the cerebral disturbance is at once corrected. Small as the quantity is it is an immediate and a substantial relief to the oppressed and disordered circulation of the brain.

The discussion of this subject naturally leads to the consideration of the *slighter forms* of jaundice, a thoroughly bilious aspect of the countenance, which is of frequent occurrence in persons of intemperate habits, or who are prone to indulge in rich and stimulating articles of diet, and likewise in those of sedentary and studious habits. Among the first class the liver is unduly excited, bile greatly increased in quantity and vitiated in its properties is secreted and beyond what finds its way into the intestines ; a portion is absorbed and circulates with the blood giving rise to a sallowness of the skin. The alvine evacuations often exhibit a considerable amount of bile, and this not unfrequently produces a scalding or painful sensation in the rectum. If stimulants be taken freely and habitually the motions are sometimes exceedingly light-coloured differing little in appearance from those of an infant, showing a deficiency of bile, and, in my opinion, in most instances a diminished *secretion* of it though the countenance may have a bilious expression. In this case the liver has become congested or is otherwise structurally diseased, in consequence of which the bile is interrupted in its escape from this organ ; and hence the absorption of it and the discoloration of the skin.

In persons of sedentary or studious habits the circulation becomes weak, the blood impure or defective in vital properties,—conditions which are invariably associated with the accumulation of it in the abdominal viscera. The sallowness of the countenance, or its dirty-brown hue, is an unerring indication of the torpid and disordered state of the liver.

One other species of jaundice to complete the proposed sketch of this disease remains to be considered, viz., the jaundice of new-born infants. When this occurs it is mostly within a few days after birth. It is rarely an important affection as it ordinarily yields to mild measures : it nevertheless possesses considerable interest in a physiological and pathological point of view in connection with the inquiry in hand.

Writers who have investigated this species of jaundice, and who have had ample opportunities for the study of it, differ greatly in their opinions as to the circumstances which give rise to it ; and it appears to me that, in this instance, as in the other cases which have been brought under notice, they lose sight of the true or the generally prevailing cause of the malady. One justly high authority on this subject states,* that “it arises from viscid matter obstructing the gall-duets.” The same doctrine is advocated by Mason Good. According to Copland it may originate in *seven* different causes which he particularizes ; among which we have the obstruction of the gall-duets by this viscid matter, the spasm of these ducts, a superabundance of the biliary secretion, a paralysed state of the secreting structure of the liver, the stagnant and altered blood contained in the umbilical vein, the absorption of the *meconium*, a green substance which is found in the large intestines of the foetus.

* Dr Underwood, *opus cit.*, p. 126.

These several conditions might possibly be causes of the disease; but in the consideration of this the question is not how it might possibly originate, *but by what cause it is usually produced*. When the pathological inquirer exercises his ingenuity to discover the possibilities which may give rise to any particular affection, he never fails to become indefinite, shadowy, and anything but practical in his views. The more indefinite he is, or the more he elaborates and refines, the larger is the field for the display of learning of a certain kind, and the free play of the imagination; and this mental power has much to do with the creation of these distinctions.

It is strange, and to me inexplicable, that men distinguished by their scientific attainments, familiar with the physiology of the fœtus, and knowing well the difference in the circulation of the blood at this time and after birth, should not perceive in this difference *a state of the liver peculiar to fœtal life*, which will readily account for the occasional occurrence of jaundice in infants.

Without entering here into a full description of the circulation previous to birth, it may be stated that the liver receives a greater amount of blood than any other organ,—an amount beyond what is transmitted to it when it quits the womb. One source of its supply, the umbilical vein, is then cut off having served the temporary purpose of fœtal life. In consequence of the presence of this abundance of blood the liver acquires an immense size, its growth much exceeding that of the rest of the viscera: in fact it alone seems to fill the upper region of the abdomen. The blood contained in it is not appropriated to the secretion of bile, as this is not wanted, nor the secretion of any other known fluid. It contributes to the large development of the organ; but a portion of this development is not real; does not arise from the growth of the hepatic tissues; but is due to

the *congestion* of the liver: and the surplus blood which this possesses is withdrawn from it after birth, and is a valuable addition to the current in general circulation, increasing the vital resources of the animal system at a time when this requires such aid on entering upon a new stage of existence.

In treating of the several species of jaundice I endeavoured to prove that, with the exception of the cases pointed out, the disease is to be ascribed to *congestion* of the liver; and when it occurs in new-born infants it is attributable to the same cause. This congestion exists to a considerable extent previous to and at birth; nor can the accumulated blood at once be disposed of to the advantage of the body. It is gradually withdrawn and thrown into general circulation; but while the liver is undergoing this change, a new function is developed in it, *the secretion of bile*; so that this new action arises, producing an important fluid, when this organ, in numerous instances, is suffering from excessive congestion. The cause of jaundice, as a rule, is to be traced to this condition, which by some writers of high reputation has been entirely overlooked; and by none has it been apprehended as a valuable practical fact. It is admitted that the liver, in infants who die of this disease, or with the external symptoms of it, is always found large and sometimes nearly twice its natural size.*

There is another point connected with this subject of deep physiological interest which has not escaped the notice of the scientific inquirer, viz., that while the liver during foetal life is abundantly supplied with blood, it does not in any degree exercise its natural office,—*the secretion of bile*,—from which it is evident that something is wanting necessary to the production of it,—which something has

* Dr Underwood, *opus cit.*, p. 129.

eluded the enterprising investigations of the physiologist. One who was among the distinguished of the present age observes: "But what is most extraordinary is this, that the proper function of the liver is not performed while the foetal circulation continues; and it is only when the blood of the umbilical vein is cut off by the tying of the cord, and when the venous blood comes slowly up from the vein of the membranous viscera of the abdomen, to fill this extensive system, that the true and stimulative bile is formed."*

In an early part of this work I entered at length into an explanation of the physiological action of friction applied to the abdomen and the spine. In respect of the former it was stated, that by acting on the nerves of the abdominal viscera, the great nervous centres, the medulla oblongata and spinal cord, were roused to increased activity, in consequence of which a stronger current of nervous power was transmitted by them to the viscera, enabling these to perform their functions with greater regularity and vigour. A just conception of this physiological principle will explain the non-secretion of bile during foetal existence and its secretion immediately after birth.

The vital operations of every organ of the body depend on two causes: *First*, the blood which is present in it; and *secondly*, the connection of its nerves with nervous centres. Action and re-action is unceasing between these and all organic tissues. This reciprocal action is necessary to the continuance of the functions of both classes of organs, *the nervous, and the organs which these supply with nervous power*. In the foetus the nervous centres, as the medulla oblongata and spinal cord, are unexcited. They are not

* *The Anatomy of the Human Body*. By JOHN and CHARLES BELL. Vol. ii. p. 39. The physiology of this work was chiefly the production of Charles, afterwards Sir Charles Bell.

stimulated through the awakening influence of the five senses, by the process of respiration and of digestion, by mental and bodily movements: hence they are in their lowest possible vital relation to the liver. They furnish to this no liberal nervous stream, and it is from this cause, and not from the want of proper blood, or from any peculiarity in its circulation, that the liver is incapable of secreting bile.

When the child is born, it comes into a world that may emphatically be described as enveloping it in stimuli to vital action. Everything around it is destined to be a source of excitement to the animal system. The air within and without the body, light, sounds, and whatever ministers to sensual gratification, employing this term in its most comprehensive acceptation, is stirring and creating life within, and multiplying the relations of the human being to things without. At the very commencement of this new state of animal existence, the liver, in common with every other organ of the body, enters upon new duties, the most important of which is the secretion of bile; and while labouring to produce this for the first time, the *congestion* of the organ occasionally impedes the escape of this fluid in the direction of the biliary ducts; and hence the absorption of it and the *jaundice* of new-born infants.

The views which are here developed accounting for remarkable and deeply interesting phenomena,—the non-secretion of bile in the fœtus, though the liver is furnished with blood to excess,—and the secretion of it immediately after birth, when the blood out of which it is made is not that which has been produced by the digestive and respiratory organs of the infant, but consists almost entirely of that which had been derived from the mother,—are views which have not hitherto suggested themselves to the physiologist. Do they not afford a satisfactory explanation of the phenomena in question?

After these somewhat lengthened remarks concerning the origin and nature of jaundice, it is necessary to enter upon the consideration of one department of its treatment, and the most efficient in its influence, viz., the employment of adjuncts. The investigation of the disease has been preparatory to this end. Remedial measures may be introduced to the notice of others under two very different conditions: they may be dogmatically laid down as applicable to certain forms of bodily derangement, without entering at all into the physiological and pathological considerations which should guide and regulate the use of them. This plan has little to recommend it, though it is the one usually adopted by writers, and invariably when they address the non-professional public; and indeed when their aim is to enlighten the medical profession, their works seldom furnish that kind of information in regard to the nature of disease, which of itself would suggest, independently of rules of practice which may be prescribed, much that might be extremely valuable in relieving or arresting numerous disorders. The method which it has been my object to pursue throughout this inquiry *has been to show what disease is*,—what, in fact, is the character of the circulatory and nervous disturbances which distinguish it, as the efforts made to correct it have to act on the circulatory and nervous systems. Hence the importance of presenting clear views on the derangement of them and the mode in which they may be beneficially influenced.

We will imagine a case of jaundice before us with the following symptoms: extreme yellowness of the skin, the tongue more or less furred, the bowels inactive, and on being moved the evacuations white or clayey in appearance; the urine excessively turbid, depositing a thick sediment; the appetite impaired; pain in the stomach and nausea, and at times pain or tenderness in the region of the liver: great

languor is mostly present. A difference in the degree and number of the symptoms is not a matter of great moment in the discussion of general measures of treatment.

From the foregoing observations concerning this form of jaundice, it is clear that the liver, and in various degrees the whole of the abdominal viscera, are suffering from congestion, from the undue accumulation of blood; and, further, that the nervous system is depressed, and is unequal to the performance of its ordinary functions. It will not be questioned, whatever may be the differences of opinion as to the way in which it should be accomplished, that the primary object is to *diminish this congestion of the liver*,—to set the blood at liberty which is at rest in its parenchyma or substance, obstructing the escape of bile in its natural direction; and in proportion as this is effected the pain or inflammatory symptoms which may exist will be relieved. In the consideration and application of remedies it should be kept in mind, that the liver, in this disease, is seldom, if ever, alone disordered: the ample venous trunks and the abdominal viscera generally are implicated.

Fomentations and friction to the abdomen are the important remedial agents in the treatment of jaundice. The combined influence of the two compels the engorged abdominal vessels,—the minute capillaries and large veins,—to contract upon their contents, by which the blood is forced into motion and conveyed in the direction of the right side of the heart, from which organ it is sent into the lungs to be oxygenated. This process of increased circulation commences with the employment of the means in question, and gains additional vigour with the continuance of them. The beneficial effects are seen in the course of a few days in the freer and more frequent action of the bowels, and in the improved colour of the evacuations; sometimes the bile will be present in them in considerable quantity: the urine

will be more copious, and the sediment—usually deposited will be diminished; the pulse will manifest greater strength; the nausea and pain in the stomach, and in the region of the liver, will be relieved, and the yellowness of the skin will rapidly decline.

The changes which are here described are the natural, and it may be said the inevitable, consequences of the external applications. These cannot possibly fail in throwing the blood into more active and vigorous movement; and according to the degree in which this is effected, not only will the symptoms characteristic of the disease be removed, but the entire animal system will be left in a far healthier state than existed previous to the attack.

Is it a matter of trifling moment to cure disease without leaving behind the injurious effects of powerful remedies, and as is frequently the case *the remedies themselves in the body long after recovery?* The mercurial preparations which are used in the treatment of this affection, and in liberal doses, by the profession, remain for months; and it has been satisfactorily established by writers a much longer period in the system. The presence of them is not harmless: they create an extraordinary susceptibility to atmospheric influences,—changes unfelt by others produce a sensible impression on those who have been subject to such treatment. This susceptibility opens, indeed, a wide door to the introduction of numerous ailments the origin of which in after life is often little suspected.

Other means are ordinarily employed to correct this disordered state of the liver, as emetics, diaphoretics, purgatives, blisters, general and local bleeding, all of which debilitate, protract recovery, and render it less satisfactory than it ought to be, or will be, if the disease be judiciously treated. These various remedies, very different in their action, are used from the same consideration,—*the necessity*

of relieving the congestion of the liver, or of setting the stagnant and accumulated bile at liberty. Either object may certainly be accomplished by much simpler remedies. Fomentations and friction are among the most active and efficient that can be applied in this disturbed state of the organ and of the biliary apparatus; and the friction should be enforced until the alvine and renal evacuations have become perfectly natural.

The *chronic* form of jaundice next falls under consideration and has strong claims to attention. It is always tedious, if not difficult, to cure. It is sometimes the result of the acute form of the disease which has only imperfectly yielded to treatment. It may, however, be the result of other affections, or it may be gradually induced by intemperate habits, depressed mental states, sedentary and studious pursuits; or it may arise from interruption of natural secretions, from long residence in warm climates, and other circumstances.

The symptoms of the disease will vary according to the character of the constitution, the age, and the nature of the exciting cause. The countenance displays a yellowish tinge, and in most cases the white of the eye is similarly discoloured; the pulse is generally quicker and smaller than natural; the bowels are ordinarily torpid,—in an advanced stage of the malady they are relaxed; the evacuations, with few exceptions, are deficient in bile, being of a light yellow or clayey appearance. The patient is languid, unequal to much exertion, the body loses flesh, the countenance has a haggard or anxious expression, the appetite is impaired and digestion weak.

When symptoms of this kind, and in this degree, are present, and have existed for months, the derangement of the liver is not simply functional, not a mere trifling disturbance of the blood-vessels and biliary ducts of the organ,

which may be the case on the first manifestation of the disease. The parenchyma or substance of the liver has undergone some change, though during life it is not easy to determine the exact nature of it. Whatever may be the structural modifications in it, it is clear that its circulatory and nervous conditions are feeble and depressed in consequence of the debility of the nervous system, and the deteriorated properties of the blood. The sallowness of the skin, conjoined with other symptoms, is evidence of the congestion and inactivity of the hepatic functions.

The treatment usually pursued in such cases is often injurious, weakening and further exhausting the animal system. Mercury, if persisted in beyond an extremely limited period, acts as a poison, seriously aggravating the evils which it is intended to correct; and the effects of other remedies are scarcely less prejudicial. At last the patient, little, if at all improved, has his hopes kept alive by the anticipated benefit of warm weather, or is recommended to try change of air, or the virtues of some landed mineral spring.

From the state of the abdominal viscera, at this time, all more or less suffering from congestion, from languid and disordered circulation, and likewise from a deficiency of nervous power, it will not be questioned, that the considerations which should guide the practitioner in the selection and application of remedies are twofold: *First*, to equalize the distribution and invigorate the motion of the blood; and *secondly*, in the attempt to effect this, to employ such means as shall economise and increase the strength of the constitution. These are the two great objects which should be kept in mind. Though the liver may be regarded as the organ chiefly in fault, nevertheless its derangement is invariably associated with that of the whole of the abdominal viscera. Hence the remedial measures to be eminently successful should have a general, rather than a local application.

Friction and fomentations to the abdomen will exercise this influence in a higher degree than any other class of agents. This opinion is expressed without any reservation. Friction night and morning for quarter of an hour, and the hot moistened flannel continued throughout the night, some impervious material being placed over it to retain the heat, will, in the course of a few weeks, in not a few instances, produce a decided change in the character of the symptoms. In eight or ten days an improvement will be observed if the disease be not too far advanced to admit of relief. The complexion will have become clearer, the motions and the urine more natural as to quantity and quality.

When it is considered how these remedies directly affect the viscera,—their circulatory and nervous conditions,—the beneficial results, so far from being extraordinary, are what might reasonably be anticipated from a knowledge of their physiological action. They necessarily excite and invigorate the motion of the blood, and in a large mass of arteries and veins in which it is either at rest or feebly pursuing its course. To throw blood, so circumstanced, into lively movement, is not only to relieve the internal organs oppressed by it, but is in fact to make a positive *addition* to that in circulation. By strengthening the current in motion, greater vital resources are at hand to minister to the requirements of the body. The liver is sometimes enlarged, and occasionally the seat of pain, in persons who present none of the indications of jaundice, though the complexion rarely displays its usual clearness. In such cases it will generally be found that the bowels are inclined to constipation, and the urine, if not depositing a sediment, is extremely variable in colour, being at one time of a deep yellow hue, at another as colourless as ordinary water: the latter condition most frequently prevails, and is evidence of the inactivity of the hepatic functions. The foregoing

treatment will be equally applicable in cases of this kind, which are by no means uncommon in females of sedentary habits. Among other remedies, with which it should be combined, are *mercurius*, *aconite*, *nux vomica* and *ippecacuanha* in the usual homœopathic doses.

Before concluding the consideration of this particular subject, another matter suggests itself elucidating the advantages of friction. Persons who are predisposed, from causes which have been previously mentioned, to gall-stones, who suffer acutely from the efforts which nature makes, and often successfully, to expel them, would find in the occasional employment of friction to the region of the liver, in the intervals of the attacks, a remedy more efficient than any that has hitherto been pointed out tending to prevent the *formation* of them. To understand the efficacy of the application, it is only necessary to know the conditions which conduce to the production of biliary calculi,—conditions which are not difficult generally to define. They are of two kinds: the secretion of vitiated bile by the liver is one, and in all probability an essential one: the other is the protracted *retention* of bile in the gall-bladder in consequence of which it undergoes chemical changes, one of the results of which is the gradual creation of gall-stones. Nature is never idle. If the materials which she produces, and for an important purpose, cannot be disposed of according to the requirements of the animal system, as in the case of bile under the circumstances stated, new affinities are developed among the elements of this fluid and the result is the formation of calculi.

Whichever of the two views be adopted as to the origin of these bodies, it will not be doubted, that whatever remedial measures tend to improve the properties of the biliary secretion, and facilitate its escape from the liver and the gall-bladder, will be among the most efficient causes tending to

prevent the growth of them. Friction to the abdomen, and particularly to the hepatic region, will certainly excite the liver to increased action, and accelerate the flow of bile from it; and it will at the same time act on the gall-bladder and its associated ducts, in such a manner that this fluid cannot possibly become inspissated in them, or in any other condition be unduly retained by them. To produce these salutary changes in the biliary apparatus is a certain prevention of the formation of gall-stones. Of the efficiency of the application I speak from personal observation, cases having come under my notice strikingly illustrative of the advantages of it.

§ 14. *The application of Friction in cases of Diphtheria, Croup, Acute and Chronic Bronchitis, and ulcerated or malignant Sore Throat.*

It will not be questioned that the diseases, which are here enumerated, are among the most formidable and distressing to which humanity is liable. Some of them are exceedingly difficult to cure, and terminate fatally in a large proportion of instances. Hence the deep interest which they will ever possess to the scientific medical inquirer. Admitting that the nature of them is understood, there is still a wide field for investigation concerning the remedies calculated to arrest them. On this point there are great differences of opinion and not less remarkable differences of practice. While the pathologist has of late years extended considerably our knowledge of disease, defined its seat, the tissues which it particularly involves, and the symptoms by which it is characterized, he has not in anything like the same degree improved the principles of the healing art. These have been greatly modified, but less from his researches than from the observation and experience of the enlightened practitioner,

studying with attention the external manifestations of disordered action, and the effects of medicinal agents upon the animal economy.

It may possibly be imagined, but certainly from a superficial acquaintance with the subject, that the adjuncts, such as have been brought under notice, have no important practical bearing on the diseases the nature and general treatment of which it is my intention on this occasion to discuss. This, however, would be a serious mistake, and would indicate on the part of those who entertain the opinion, a very imperfect knowledge of the character of the morbid conditions which exist, of the structural and functional relations of the tissues implicated to the rest of the animal system, and of the influence which the adjuvants in question are capable of exercising. It is true that they have not hitherto been employed in the endeavour to control these several forms of disease: they have not been thought of; but clearly from want of more comprehensive ideas concerning the intimate vital associations by which the different organs of the body are connected together in harmonious physiological action. The attention has been too exclusively fixed on the seat of the mischief, as the pharynx, the larynx or trachea, according to the nature of the malady. The anxiety has been to discover some medicinal agent that would act efficiently on the affected organ, losing sight in this search, and in the application of the remedy or remedies selected, of the state of the vital powers at large; or if this has been an object of consideration, it has not suggested auxiliaries to co-operate with the other means used. These alone have inspired confidence and have alone been enforced.

Few aggravated affections, perhaps none, ever retain long their *local* character. Every step of their progress is disturbing and undermining the constitution. The nervous and circulatory systems are no longer in their normal con-

dition. They are either unduly excited or unnaturally depressed. To this general derangement is to be ascribed the increased severity of the *local* symptoms. It is this which keeps up and augments the disordered action of the tissues by which they are manifested. The nerves of these tissues fail to be channels for the conveyance of a vigorous current of nervous energy; they become languid and unequal to their ordinary duties; and the blood being at the same time deteriorated in its properties, the two causes combined satisfactorily account for the rapid structural changes which occur endangering life, and frequently terminating fatally.

This general disturbance of the functions of the animal economy, in connection with serious local diseases, is suggestive of pertinent practical observations. The prejudicial influence of this general constitutional disturbance brings into prominent view the importance of those measures which are here designated adjuvants. If it can be shown that these are admirably calculated to arouse and strengthen the vital powers, imparting greater vigour to the nervous and circulatory systems, it must be evident that whatever improvement is effected in these, will tend in a corresponding degree to ameliorate the affections of the respiratory organs, whether in the form of diphtheria, croup, or of malignant sore throat.

It is necessary for the practical objects of this inquiry, and it will neither be uninteresting nor uninformative, to glance at the physiological relations existing between the organs, the seat of these diseases, and the abdominal viscera, including the arterial and venous trunks.

It is scarcely needful to observe, that all parts of the body, through the nervous and circulatory systems, are intimately bound together,—in fact, so associated that it is impossible to influence in a marked degree any region of it, without modifying, though not always sensibly, the functions of every other region. Unquestionable as this truth is, and obvious

as it ought to be to the enlightened understanding, it is nevertheless very imperfectly apprehended; and if seized at all, it is not as a comprehensive principle abounding in important practical applications. Were it so grasped by the mind, it would have been fruitful in the suggestion of remedial measures, in agents not expressed by the term drugs, whether prescribed in large or small doses. These judiciously and wisely used are invaluable; but they are not to be adopted to the exclusion of other matters capable of exercising, on many occasions, a more immediate and potent salutary influence on the disordered actions of the animal system, than any medicinal substance. The aim of the physician is to cure, and whether he effects this by drugs, by other means, or by both conjoined, does not in any way lessen the credit which is due to him for his skill and intelligence. These mental qualities, incorrectly estimated, will appear to the multitude, the unreflecting many, of a much higher order when the purposes accomplished by them are by means which they do not understand,—means mysterious and supposed to imply great learning and thoughtful study,—than if the same amount of good were done by measures simple and apparently intelligible. The simplicity and imagined intelligibility of them obscure their value in the eyes of the ignorant. The practitioner, however, who appreciates the true dignity of his profession, and feels the deep responsibilities which rest upon him in the conscientious exercise of it, will think only of the end which he has in view;—the estimate which others may form of him on the ground of his mode of treatment will be beneath his consideration. His object is to do good, and his reward is the success which crowns his efforts.

The physiological relations between the pharynx, larynx, and trachea, and the abdominal viscera, may be studied under three separate heads, in reference to the effects to which friction and fomentations to the abdomen give rise.

I. The sympathies which exist between the *mucous membrane* of the respiratory and that of the digestive organs, are remarkable and familiar to the practitioner. The derangement of the latter, according to the nature and extent of it, shows itself in a variety of symptoms establishing the intimacy of the association; as sometimes a troublesome cough, disordered breathing with more or less of expectoration, pain, or uneasy sensations in the chest; on other occasions there is an unpleasant taste in the mouth, or this may be dry or clammy, the tongue furred, or it may be glazed, displaying a smooth polished surface, which generally indicates long-continued irritation of the mucous membrane of the digestive organs, or irritation that has passed into inflammation; the uvula may be elongated or the tonsils enlarged, and the pharynx and larynx may be greatly changed from their natural aspect. These, and other phenomena which might be mentioned, are striking examples of the sympathy which links the respiratory to the digestive organs, by which is to be understood such structural and functional relations between the two, that if one be prejudicially affected, the other is at once made sensible of it and gives unmistakable evidence of the fact.

The digestive apparatus, from its magnitude and the nature and importance of its functions, exerts a more immediate and a *far greater* influence on the respiratory organs, than the latter exert on the digestive, when either is the seat of vital disturbance which is not of an exceedingly aggravated character. The difference between the two in this respect, keeping in mind the conditions on which it rests, bears in an especial degree on the selection and application of remedies. The disordered action of the digestive organs can be little, if at all, influenced by means applied to the respiratory. The latter, with the exception of the lungs, offer no large *external* surface, presenting nerves and blood-vessels which

may be so acted upon as to modify the functions of those of the abdominal viscera. This is not the case with the digestive in relation to the respiratory organs. The former, through the large abdominal surface, may be powerfully excited, in such degree and mode, that the salutary changes induced in them are at once felt by, and manifested in the improved condition of, the respiratory organs the seat of disease. It cannot possibly be otherwise. To arouse the mucous membrane of the alimentary canal to healthier and more regular vital processes, and at the same time to promote the more natural secretions of the abdominal viscera,—effects necessarily flowing from the application of friction to the latter,—is to influence, to a less extent, but in a corresponding manner, the pharynx, larynx, and trachea; and if the disorder from which they suffer admit of relief or cure, the beneficial agency of the means employed will be apparent in the amelioration of existing symptoms. If the affection be inflammation it will be subdued or rendered milder; or if ulceration be present, the granulating and healing process will be greatly facilitated; or if the tonsils be considerably swollen, they will gradually be reduced; or whatever be the nature of the malady located in these portions of the respiratory apparatus, it will give evidence of the extraordinary efficacy of the treatment adopted. On these matters I speak from extensive personal observation,—indeed, from daily experience. Not wishing that others should accept and rest on my word, my anxiety is to display, in clear and simple language, the physiological grounds which conduce to the advantages insisted upon. Had others, who have treated of disease, followed the same line of conduct, given explicit and satisfactory *reasons* for the remedial measures they recommended, the healing art would not have been in the miserable state in which it is. Where are its broad and well established principles? Are they expressed in the widely

different doctrines advocated by acknowledged medical authorities? Or do we observe them in the routine treatment of the practitioner,—a routine *peculiar* to himself? Is there not a necessity for further researches concerning the nature of disease and the action of the means prescribed to control it?

In the preceding remarks I have touched on one head,—the *sympathetic* relations linking the digestive to the respiratory organs, and in a great measure through the intervention of the mucous membrane. It is stated that to invigorate the vital conditions of this in connection with the former, is to influence in a striking degree the disturbed functions of that portion of it belonging to the latter. Hence the value of friction to the abdominal viscera, when the symptoms of diphtheria, croup, or of malignant sore throat exist.

II. The description of the second head will bring still further into view the importance of this inquiry in relation to these particular affections,—will place before the mind additional facts illustrative of the efficiency of friction to the abdominal surface under circumstances of no ordinary kind.

In diphtheria and malignant sore throat the circulatory system generally is seriously disordered, as is shown by a variety of phenomena, as the altered state of the pulse, which, when these diseases are preceded by severe febrile action, is quick and full, but subsequently is extremely frequent and small; the body, after the cessation of febrile excitement, becomes cold and clammy, the face pallid and anxious in its expression. From these, and numerous other symptoms, and particularly from the offensive breath, and the character of the morbid condition of the pharynx in diphtheria, it is evident, and is universally acknowledged, that the blood is vitiated in its properties, and to such an extent that it is regarded by some writers as *poisoned*, and that

the poisoned qualities of it are the cause of this distressing malady. Here are facts of the highest vital importance for consideration. It is less my business, at this time, to inquire how this diseased blood and disturbed circulation originate, than calmly and thoughtfully to reflect in what way the morbid effects are in part to be met by general remedial measures: how they shall be combated in their earlier manifestations, as it is then, and too often then only, that energetic treatment is followed by prompt and marked success.

One of the problems which has to be solved bearing on this inquiry, is, In what manner is it possible to improve the properties of the blood, or to maintain it in a comparatively healthy state, as according to the degree in which this is accomplished, are the affections seated in the respiratory organs, relieved, arrested, or cured.

It may unhesitatingly be asserted, that the practitioner is in possession of no means that will, in the same brief period, and to the same extent, modify the properties and distribution of the circulating fluid, *as friction and fomentations to the abdomen*. As already stated, they act on a greater mass of blood, and on a greater number of important organs, in a genial and salutary mode, than any other remedial agent that has yet been pointed out. The application of them excites and invigorates the languid and interrupted circulation in the respiratory apparatus, conveying to all parts of it a healthier quality of blood, the beneficial influence of which is seen in the ameliorated aspect of the diseased structures. The sympathy between these and the abdominal viscera has been alluded to: it is not, however, on the *sympathetic* relations connecting the two, that the advantages of friction and fomentations altogether depend. These remedies so affect the *constitution* and motion of the blood, that every tissue of the animal system participates in

the gratifying changes induced in this vital fluid, displayed in the more thoroughly oxygenated state of it, and in its more equable distribution.

III. In the consideration of the two foregoing heads, it has been shown in what way the aroused and improved functions of the abdominal viscera, consequent on the employment of the external remedial measures, influence the respiratory organs suffering from disease in its aggravated forms. This deeply interesting subject has to be studied in another point of view, viz., the nervous relations existing between the morbid structures and the NERVOUS CENTRES, as the medulla oblongata and spinal cord.

The inquiry as yet has only taken into account the beneficial effects produced in the condition and motion of the blood, and the changes which occur in the different portions of the mucous membrane through the influence of sympathy, the exercise of which depends on the nerves by which they are connected. It is now necessary to treat of nervous agency, which is not developed and brought into active operation by means of sympathy, but through the excited functions of the nervous centres, enabling these to transmit from within, outwards, in the direction of all the organs of the body, a greatly increased nervous current. The nervous relations between the pharynx, larynx, and trachea, and these centres, especially the medulla oblongata, are intimate and extensive. The nerves of the former originate in the latter: hence every functional modification induced in the condition of these sources of nervous energy, is at once felt by the peripheral extremities of the nerves proceeding from them; and unequivocal evidence of this is observed in the altered vital actions of the structures dependent for nervous power on the nerves in question.

It is difficult to bring home this train of reasoning to the minds of others, even the bulk of the profession, in a form

that carries along with it a conviction of its practical importance; and yet it rests on facts as indisputable as any in the widerange of physiology. That the heart is the primary cause of the transmission of blood throughout the animal system is at once acknowledged: the circulation of the blood is readily traced through arteries, capillaries, and veins, back to the right side of the heart from which it is propelled into the lungs. The flow and course of the nervous fluid do not admit of the same demonstration,—do not offer the same kind of evidence; nevertheless they are phenomena scarcely less clear and satisfactory to those who have scientifically and profoundly studied the subject. The necessity of nervous centres, as sources of nervous power, which has to be supplied to, and to traverse the nerves appropriated to the tissues in which they terminate, it is not possible in the existing state of physiology to call in doubt. The nerves must be channels for something,—some active principle capable of motion,—which, as is proved by various experiments, may be accumulated and dispersed, showing the *materiality* of it. To imagine that secretion, absorption, muscular movements, and other endowments of the animal system, may be excited and maintained by a species of *vibrations* and *vibratiumcles* of the nerves, implying the supply and expenditure of no nervous agent, is a supposition, which, though entertained by distinguished philosophers of the last century, is unworthy of consideration. It had its day, and the countenance which it received shows the limited and imperfect physiological knowledge of the times. It had its use: it awakened and directed attention to nervous matter in connection with pursuits of no common interest; and was instrumental, from the influence which it exercised, in leading to brilliant discoveries in this department of science.

Though we may smile at the nervous theory of the last

century, the development and application of which exercised the genius of Hartley, Priestley, and of others, as undeserving of attention; nevertheless reasoning not less absurd, and conclusions not less illogical, characterise the views of those of the present day, who treat with contempt the idea of a material agent pervading nervous matter, and of the possibility of its being transmitted from one individual to another, which is the doctrine of Mr Braid, and the baseless foundation on which Hypnotism rests.

In the investigation of the functions of the nervous system throughout this work, and in my other productions mentioned in the course of it, phenomena are brought under consideration, which appear to me altogether inexplicable on any other ground, than the existence of a nervous principle, unceasingly created and correspondingly exhausted. We have evidence of its accumulation giving rise to acute pain, and the cessation of this on its dispersion. It is the office of the great nervous centres to generate it; and it is the office of nerves to be the media for the conveyance of it to the different tissues of the animal frame, the operations of which vary with the strength of the nervous current transmitted to them.

In the foregoing remarks, concerning the three modes in which the pharynx, larynx, and trachea may be powerfully affected by friction to the abdomen and spine, views have been unfolded which have not hitherto presented themselves to the professional mind; yet their truthfulness and practical value will scarcely be questioned by those, who from pursuing the same or kindred inquiries are alone authorities on such matters. Friction to the spine, influencing the nerves of the vocal and respiratory organs,—the seat of the diseases which it is the object of these observations to introduce,—will probably fail to make much impression on the minds of many as a remedial agent: will, in fact, be regarded rather in the light of a speculative suggestion,

than as a practical principle founded on a knowledge of its action and the experience of years. Such an impression would, however, be unjust, and would betray ignorance of the extent and value of modern researches in elucidating the functions of the nervous system.

A singular objection has been urged against the employment of these adjuncts by a reviewer of this work, who forgoes the luxury of damning with faint praise: it is that the application of them is attended with *trouble*. One would scarcely have imagined that this would be brought forward as a thing of grave moment, when the consideration is the preservation of life endangered by disease, or the diminution of human suffering. It is only when they are wanted as co-operative means to relieve or correct existing evils that they are recommended. And are they then to be treated with indifference on the ground of trouble? Is the water system, as a curative agent, unaccompanied by it, a system that is invaluable in numerous forms of disordered vital action when judiciously and wisely used?

It is proved by experiment, that, on laying bare, and *mechanically* irritating, the spinal cord, the bowels at the same time being exposed, in order that the effects produced upon them may be observed, distinct muscular movements are excited in the latter, establishing the direct connection between the two, and the dependence of the one upon the other for nervous power indispensable to vital action. In my own numerous experiments on rabbits it was shown,* that the same kind of irritation on being applied to the substance of the *brain*, and also the application of stimulants and sedatives to it, instantaneously affected the contractions of the heart: if they had altogether ceased, they were resuscitated; or, if feeble, they were invigorated; or, if strong, they were

* See *Experimental Inquiry into the Laws of Life*, &c.

rendered weaker and slower according to the nature of the substances employed.

While the accuracy of these phenomena, and the deductions flowing from them, may be readily admitted,—viz., the indissoluble structural association between the two, and the dependence of the heart upon the nervous centres for the power which maintains its muscular contractions; it may nevertheless be urged that the facts adduced furnish no satisfactory evidence in respect of the influence of friction to the spine on the respiratory apparatus, constituting it an important practical remedy in the treatment of disorders of the latter. Such an objection will be natural to the non-professional understanding, and will indeed be entertained by the profession generally. It is the few only that can appreciate the *rationale* and the salutary agency of the external application. Mesmerism,—the reader must not start at the word,—for it is now a fact in science;—it has taken its place among the discoveries of the age, and the time is not far distant when it will be acknowledged to be the greatest of them,—will elucidate the subject in hand, will in some measure enable us to comprehend in what manner friction operates, or how the spinal cord is affected by it so as to arouse the nerves, to which it gives origin, to increased and healthier action, modifying in a corresponding degree the condition of the structures to which they are distributed.

One of the numerous phenomena which mesmerism discloses, is that *contact* on the part of the operator with the individual the subject of experiment, is not necessary to the production of extraordinary mental and physical results; nor are these less remarkable when a state of perfect unconsciousness has been induced, or indeed in profound *natural* sleep.* Hence it follows, and in my opinion, from the

* The writer was converted to a belief in mesmerism by the experiments of La Fontaine, who visited this country in 1840. He was instructed

strictest logical and philosophical principles, that a *material* medium exists between the operator and his subject, and that it is through, and by means of it, the will and influence of the former are communicated giving rise to a multitude of marvellous results. Were this the occasion to establish the soundness of this conclusion, it would be easy to bring forward evidence, and much that is new, in confirmation of it, and of a nature that would be difficult satisfactorily to rebut. By actual contact the operator can excite the different cerebral organs to the manifestation of their functions, and, in some cases, the violence awakened by their activity is startling in intensity and character, being not unlike the ungovernable paroxysms of insanity.

These observations are not foreign to the subject under consideration. They have an intimate and practical bearing upon it. They afford a striking illustration of the power which one person is capable of exercising upon another, and through the instrumentality of a *material* substance common to both. It must not be inferred, when the outward signs of this power are not displayed, as by the employment of friction to the spine, that no effect is produced upon the animal system. This would be an incorrect and unfounded inference. A piece of steel, suspended at a certain angle to the earth, becomes a magnet; and is it therefore to be supposed, after the facts which have been stated in regard to mesmerism, that the human body, abounding in an electric or active agent, shown to be transmissible, exerts no influ-

by him, and afterwards pursued the inquiry experimentally for several years, as a valuable scientific study, and in a way that could not fail to elicit truth. To this inquiry the physiological views he has since developed concerning the nervous system are to be ascribed. The writer was the first in England who tested the phrenological organs by mesmerism, and this was at the suggestion of a distinguished philosopher, who was present on the occasion, Samuel Bailey, the author of the work, *On the Formation and Publication of Opinions*, and of other well known and admirable productions.

ence on another, when means are used which favour the passage of it, and on no other ground than the absence of the *external* indications of its action? Such an objection would possess no weight, and the argument which supported it would be an absurdity. It may possibly be imagined that the bones which enclose the spinal marrow would arrest the transmission of this imponderable principle. It is, however, established by unanswerable experiments, that neither bones nor walls obstruct its course. All gross substances, whatever be their nature, in respect of it, are as fine sieves. They are solid only to the naked eye.

This brief discussion of a deeply interesting branch of science, fraught with a practical application to mental and bodily conditions, has prepared the way to understand how friction to the spine affects the spinal cord and the medulla oblongata, and consequently the nerves proceeding from them. These nervous centres are excited to increased activity, and by the addition of an agent which is the pervading stimulus to nervous tissue throughout the whole of animated nature.

It is here necessary to observe, in order to obviate an objection which may possibly be brought against the extensive salutary influence of friction to the spine, that while the remedy directly affects the spinal cord and the nerves issuing from it, it cannot so act, from its situation at the base of the brain, upon the *medulla oblongata* giving origin to the *cerebral* nerves, which are largely appropriated to the respiratory apparatus, the seat of the diseases which it is proposed to investigate. To such an objection it is not difficult to reply. The nervous columns which compose the spinal marrow are continued into the medulla oblongata. Hence, every change occurring in the condition of the former,—the establishment of more active functions from the external application,—is instantaneously communicated to the

latter. The two are an unbroken nervous chain, and are associated in all the operations of organic life. It will, therefore, scarcely be questioned, that in stimulating the spinal cord, in awakening it to invigorated vital processes, imparting to and creating within it a greater abundance of nervous power, the medulla oblongata and its nerves will at once and equally participate in these beneficial results.

These remarks, on the *modus operandi* of friction to the spine, were required in order to show clearly the grounds on which it is recommended,—the physiological reasons by which it is enforced. Whether the explanation be received as correct or not is a matter of no great importance. Mankind are often agreed as to the reality of certain physical and vital effects, yet differ, and sometimes widely, concerning the mode of their production. This opens a wide field for investigation and speculation; and the difficulty experienced is to interpret justly the phenomena which fall under notice. The good which friction is capable of exercising remains as a fact, whatever may be the opinions entertained in respect of its action.

Diphtheria is the first of the diseases which it is my intention to consider, embracing, however, only its general or leading characteristics. An extended or elaborate study of it would be foreign to the object in view, viz., the efficiency of one class of remedies in the treatment of it.

This serious and distressing affection, which of late has prevailed in this country, and for the numbers attacked, has been attended by a fatality surpassing that of any other acute disease, was regarded, at first, as altogether a new disorder; and certainly, in its appalling form, in the suddenness of its invasion, and the rapidity of its march towards an unfavourable termination, it was new to the present generation of medical practitioners, and would have been equally so to their immediate predecessors.

It is satisfactorily proved by Bretonneau, in an excellent work on the subject,* that the disease was not unknown to the ancients, as is shown by the description left by Aretæus, which, considering the state of medicine at the period, is sufficiently accurate to indicate distinctly the nature of the malady. He speaks of it as common to Egypt and Syria. It has, at long intervals, several times re-appeared. It was epidemic in Holland in the fourteenth century; in Paris in the sixteenth; in Spain and Naples in the seventeenth; and in New York about the middle of the last century. It again visited France in 1818-19-20; and from the interest which it created, was ably investigated by Bretonneau, Trousseau, Chomel, Andral, and others. It has recently passed over to England, and here its ravages have been fearfully fatal. It has since broken out in the United States. In all its visitations, whatever be the region in which it appears, the remarkable phenomena by which it is unmistakeably characterised, are scarcely at all modified by geographical or local circumstances.

It usually attacks the young, and in a far greater proportion those of the lower than of the other classes of society: and unquestionably crowded and unhealthy dwellings, humid and undrained districts, and poor living, are powerful predisposing, if not exciting, causes of diphtheria. This, however, is not circumscribed by such conditions, as is proved by cases which have occurred in this town.† Those which have fallen under my own personal observation have generally been apparently favourably situated for health, and possessing abundantly the ordinary comforts of life. In some instances, the houses were detached and on elevated sites, receiving the fresh and salubrious breezes of a wide expanse of country.

* *Des Inflammations Spécial du Tissue Muqueux, et en particuliere de la Diphthérie, &c.* Par P. BRETONNEAU.

† Sheffield.

Hence it is evident that poverty and its concomitants are not alone the causes which predispose or give rise to this formidable disease.

The symptoms by which diphtheria is ushered in vary according to the severity of the attack. In its milder form, the child complains merely of a slight difficulty of swallowing, the danger of which, at the time, is little suspected by parents, and little or no attention is given to it. In six or twelve hours it is greatly aggravated, and then medical aid is usually sought. On examining the tonsils, the soft palate, and uvula, they are perhaps found red and œdematous, presenting a swollen appearance, or *one or several minute white patches* are observed on the tonsils, the presence of which are the first clear, unequivocal, and characteristic signs of the affection; and if their progress is not arrested at this stage, they rapidly enlarge, and ultimately spread over the whole of the soft palate or posterior part of the mouth, assuming the condition of a *fulse* membrane, which is an *exudation* of the mucous membrane involved in the disease. It is this exudation, under such a form, which is the pathognomonic or distinguishing feature of diphtheria.

When the throat is beginning to be seriously affected, as is shown by difficulty of swallowing, there is ordinarily considerable fever. The skin is hot, the countenance flushed, and has an anxious or uneasy expression; the pulse is quick, and occasionally full and strong; the secretion of urine is diminished, and the bowels are torpid. The fever, however, if the march of the malady be unarrested, is of short duration. It is followed by depression of the powers of life. The pulse, though it remains frequent, is small, the body is suffused with a clammy perspiration, passing into a state of collapse; the breathing is impeded, and the swallowing painful and difficult, if in fact not altogether impossible. The suffering which the child experiences in the attempt to

swallow causes it obstinately to refuse both food and physic; and, if not promptly relieved, it dies of suffocation. The air-passages are entirely closed by the *false* membrane which has been thrown out, in appearance not unlike *dirty wash leather*. In some cases, which have come under my notice, it had the aspect of *coagulated* blood, hanging like a curtain from the roof of the posterior part of the mouth; and though it seemed to exclude the passage of air to the larynx and trachea, the breathing was less embarrassed than could have been imagined possible in such a state of things. A striking example of this peculiar morbid condition occurred in an adult, forty years of age, in easy circumstances, and possessing naturally a vigorous constitution, but in some measure undermined by indulgence in spirituous potations.

When the disease has advanced to or is approaching its last stage, the breath becomes exceedingly offensive, so much so that it is repulsive to the feelings to come near the patient: blood and sanious matter ooze through the false membrane, flowing from the congested and diseased vessels beneath it, imparting to this firmly compacted substance an appearance not easy accurately to describe.

The invasion of diphtheria is at times sudden, and awfully appalling in the nature of its symptoms: occasionally it is accompanied with little or no fever, extraordinary prostration of the vital functions being among the first indications of it: the patient, in the course of a few hours, is in a state of collapse, which, conjoined with the affection of the pharynx, larynx, and at times the trachea, often renders medical treatment of no avail. Death ensues before this can become operative, whatever be the character of the means employed.

In other instances, the disease commences with acute pain in the head, vomiting, the discharge of blood from the

nose, mouth, or rectum, these symptoms being preceded by violent febrile action, which, however, soon subsides. The countenance then displays extreme pallor, deglutition is distressingly difficult, if not impossible, the breath is fetid, respiration is greatly embarrassed, the powers of life falter, prostrated as if by a poison introduced into the system, and the patient gradually sinks into a state of insensibility from which there is no recovery.

The description given of this disease by the learned physician of Philip II. and of Philip III., when it broke out in Spain in the sixteenth century, though it was then differently and very variously designated by writers, is an accurate picture of the severe forms of diphtheria in the present day. Quoting his words as rendered by Bretonneau: “ c’est la plus grave maladie qu’il est rencontré; il s’étonne de la rapidité avec laquelle des individus qui paraissaient jouir de la plus parfaite santé, se trouvaient *mortellement* atteints, et disproportion qu’il remarque entre le danger réel et l’apparence, *souvent si légère* du mal.*” The details into which he enters can leave no doubt as to the identity of the affection which manifested itself at that period, and the one that has recently visited this country, spreading its ravages far and wide, and which has not yet quitted its shores.

Diphtheria, from the different portions of the air-passages attacked, the degree of the morbid action which is present in them, and the amount of co-existing constitutional derangement, may be divided into three varieties: *simple diphtheria*, *croupal diphtheria*, and *malignant diphtheria*. The first is ordinarily mild, and fortunately is the most generally prevailing form of the disease. It is preceded by fever, headache and restlessness; the tonsils and uvula are swollen, the former sometimes to a considerable extent,

* Bretonneau, *opus cit.*, p. 67.

and upon one or both of them is observed a small white or yellowish patch of membranous exudation, which in some cases seems to diffuse itself as a thin coating over them; the glands of the neck are not unfrequently enlarged and painful to the touch. These symptoms, with judicious treatment, are not difficult to cure.

In *croupal diphtheria*, the malady, so far from being confined to the pharynx or posterior part of the mouth, as in the milder manifestations of it, has passed to the larynx and trachea or wind-pipe: and in these situations a yellowish or dirty white leathery exudation is thrown out, which rapidly spreads, and ultimately becomes of considerable thickness and consistency. The symptoms, which ordinarily precede and accompany this aggravated local and constitutional disturbance, are intense fever, the quick and strong pulse, the hot skin, and a splitting or intolerable headache. These phenomena are indications of the re-action of the powers of life, roused to vigorous efforts by the difficulties and embarrassment which impede their natural operations. The presence of the false membrane in the larynx and trachea, may be justly inferred from the altered character of the voice, and a hoarse, barking cough, which is frequently excited from the pain and irritation occasioned by this foreign body. It so obstructs the entrance of air into the lungs, that the patient is at length relieved from his sufferings by death.

Malignant diphtheria differs chiefly from the foregoing varieties by the greater severity of the symptoms which characterise the attack. Almost from the first, the animal system is prostrated, as is shown occasionally by the spontaneous gushing of blood from the nose, mouth, or rectum; the early manifestation of the affection of the throat, and the marvellous rapidity of its march, giving rise in the course of a few hours to the membranous exudation, which exhales an intensely offensive odour. The aggravation of

this prostration, and of the morbid conditions of the respiratory organs, with indeed few exceptions, quickly brings the struggle of life to an end. When diphtheria has assumed this malignant form recovery seldom occurs.

Though the disease may be divided into three varieties, it must not be imagined that these always present themselves distinctly marked, displaying a well-defined outline. This is far from being the case. On many occasions they may be said to run into each other, so that the disease which falls under observation is of *mixed* character. The distinction which is made has nevertheless a just foundation, though practically it may be of doubtful utility; for in the several forms of diphtheria, there are leading features and conditions common to the whole of them, the difference being mainly the degree of vital disturbance. They are certainly not equally difficult to cure; but the general remedial measures which are applicable to one are not less so to the others.

The duration of the disease, whether it terminates in death or recovery, will of course vary with the severity of the seizure, the character of the constitution, and the habits of the patient. In some instances it has been fatal in thirty-six and forty-eight hours from the first attack. When the symptoms, from their severity, portend great danger, and the issue is unfavourable, this generally occurs from the third to the sixth day of the distinct invasion of the malady. When the remedial agents employed are prompt and active, operating beneficially, locally as well as constitutionally, the disease, in its somewhat advanced stage, will often readily be arrested, and convalescence be thoroughly established, in ten or fourteen days. The season of the year in which diphtheria manifests itself as an epidemic, is a circumstance which will exercise considerable influence on its symptoms and duration.

In reference to the exciting causes and nature of the disease, beyond the functional and structural changes which are obvious and well understood, all is darkness and mystery. We see effects, local and constitutional disturbance,—but in vain labour to trace satisfactorily their origin. Unhealthy dwellings, from imperfect or no drainage, insufficient ventilation, obstruction to the free circulation of air without, and the decomposition of animal matters, will unquestionably account for the great majority of the cases which occur: the evils by which they are accompanied is the penalty that man pays for his infringement of and disobedience to organic laws. This truth cannot be too emphatically or solemnly impressed upon the public. They often lose sight of their first and highest interest,—which is health,—from selfish, narrow, and contemptible economical considerations of expense,—in the form of taxation to effect sanatory improvements;—imagining, if they think at all, that the preservation and well-being of the animal system requires no sacrifices, and indeed no attention. Ignorance, and this widely pervades the masses of society, is the great impediment to physical and social progress.*

Though it will readily be admitted that the external conditions stated are, as a rule, the influential causes of epidemics, and certainly of that of diphtheria; nevertheless, it appears to me, and from personal observation and reflection, that independently of such agencies, and of infection and contagion, persons are liable to, and occasionally suffer

* These remarks have a general application; nevertheless instances will occur to the mind where the general may become pointedly particular, as in the case of Sunderland and Newcastle-upon-Tyne, the neglected sanatory conditions of which were acknowledged and felt on the outbreak of cholera in those places: the remarks, however, have in part been suggested by matters connected with sanatory improvement, which have recently excited a great deal of angry feeling and thoughtless agitation much nearer home.

from it. The number may be small. There are, however, in my opinion, atmospheric changes,—modifications of atmospheric electricity,—which act, at particular periods, more perhaps as *predisposing*, than exciting causes, of disease: from the influence they exert on the animal economy, an extraordinary susceptibility is created to local prejudicial circumstances, such as those which have been specified. Unless such general cause be embraced in the discussion, it is not easy to explain, on cogent and philosophical principles, the *long intervals* of exemption from such an epidemic, and of others more alarming and disastrous in their consequences. The physical conditions alleged as the cause of them have not sprung into existence in our day. They were far worse in times past, in various towns and cities, than at present.* Hence it is my decided conviction that, besides these conditions, something else is wanted to produce epidemics of the kind which are here contemplated, and this, it appears to me, is to be sought in peculiar states of the atmosphere, probably in its electric changes, which take place, at long periods, from causes of which we can form no just conception.

From the sudden and extreme disturbance of the vital functions in severe attacks of diphtheria, the symptoms have been ascribed by some high authorities to the presence of poison in the blood, by which its properties are greatly altered. That the blood is so affected will not be disputed. The phenomenon does not, however, require for its explanation the agency of a poison in the blood. It would at once result from the depression of nervous matter; and, in my

* Edinburgh is a remarkable instance in point. The writer knew it well in 1822; but he will not recal what it was. So marked have been the sanatory and other improvements which have since taken place, that he will say of *things* past, *De mortuis nil nisi bonum*.

opinion, whatever be the nature of the exciting cause, its *primary* impression is upon this ; and the diversified effects which follow are the manifestations of its disordered influence. It may be urged in favour of this doctrine, that in proportion as the nervous system is aroused and invigorated by the remedial measures employed, in a corresponding degree is the character of the disease modified. In the consideration of the treatment of it, one of the first objects which should suggest itself to the mind, is, In what way is it possible to *excite and re-establish the natural functions of the nervous system* ?

It must, however, be acknowledged, in speculating on the causes of this disease, that where the localities are extremely unfavourable to health, from crowded and ill-ventilated dwellings, undrained streets, and accumulated filth, the blood is inferior in its vital properties to that which is influenced by very different circumstances ; but only in those who are confined to, or rarely move out of, such localities. The population of these are the working classes, whose various pursuits generally take them from home, employed either in the open air, or in occupations necessitating active bodily exercise, the beneficial effects of which on the animal economy counterbalance the prejudicial agencies engendered by the physical conditions specified.

The next step in the inquiry is the practical application of the physiological principles which have been laid down. In what manner can they be made available in the attempt to control diphtheria ? It must not be supposed that the treatment of it is a settled question, either with the homœopath or allopath. The former is as embarrassed, undefined, and unfixed in his views and practice as the latter. This is seen in the numerous remedies which have been tried in the endeavour to hit upon the right ones, which of course have been found by different practitioners in very different medi-

cinal agents.* The candid expression of ignorance, when it exists, is not only honest, but it has its utility. It shows that there is ample room for further researches and experiments, and the knowledge of the fact is a stimulus to investigation; nor will the failure, or partial success of others, be without its advantage. The one may teach what to avoid,—the other what to pursue.

The unsatisfactory state of medical science in reference to the treatment of this disease, is in a great measure attributable to the circumstance, that the malady is altogether *new* to the present generation of practitioners; and had not in its previous invasions, as an epidemic, from the low condition of the healing art, been so investigated, and elaborately studied, as to furnish to succeeding times any definite or valuable rules of practice. Hence, on the fresh appearance of the disease, the followers of both schools of medicine, to use an expression of the illustrious Burke, finding no “precedent on the file,” had to grope their way in the anxious endeavour to discover a rational and an efficient plan of treatment. It is evident that they are still engaged in the search. Such being the case, it is of vital importance to direct attention to other means than medicinal substances, in the hope that their co-operation with these may materially aid the successful treatment of this affection.

The distinctive mark, or distinguishing feature of diphtheria, is the *false membrane* in the pharynx, larynx, or trachea, the presence of which constitutes the danger of the

* Among the homœopathic remedies which have been recommended are the following:—Mercurius, Hepar Sulphurus, Carbo vegetabilis, Arsenicum, Kreasotum, Lachesis, Secale-cornutum, Baryta-carbonica, Cantharides, Pulsatilla, Aconite, Alumina, Phosphorus, Muriatic acid, Ammonium, Causticum, Bromine, Iodine, Chlorate of potash, Nitric acid, China, Biniodide of mercury, Veratrum, Tartar-emetic, Rhus, Apia, Kali-bicrom, Muriate tincture of iron, Carbo-ammonia, and Mezereum.

disease and the difficulty of its cure ; the difficulty is seldom great in the early stages of the malady.

The objects which have to be accomplished, in the attempt to conduce to a favourable issue of the disease, may be embodied under the following three heads:—

I. On the manifestation of a small white or yellowish patch, the first indication of a tendency to the formation of the membranous exudation, in one or both of the tonsils, these glands being at the same time swollen, it is clear that the success of the means employed depends on arresting the progress of this morbid secretion. Whatever contributes to the healthier vital action of these organs,—*as an improvement of their circulatory and nervous conditions*,—will promptly and effectually facilitate the attainment of the end in view. Though the patch may be small, and on this account apparently of trifling moment, it is not so, as experience abundantly proves. It originates, not simply in the disturbed functions of the tonsils, but in the derangement of the vital powers generally. The fearful rapidity of its march, if unopposed by judicious and active remedies, if not conclusive evidence, goes far to establish this fact.

II. In the second, or advanced stage of diphtheria, the membranous exudation has assumed much larger proportions, investing, perhaps, a considerable part of the posterior region of the mouth, or extending more or less to the larynx and trachea. Difficulties of no ordinary kind now present themselves to the practitioner. He has not only serious evils, in the presence of this false membrane, to contend against, but the thorough disturbance of the animal system, the nature of which is depression ; and at length, if the disease be unarrested, prostration of the powers of life. The membranous deposit, impeding or preventing deglutition, and threatening suffocation, constitutes the urgency of the case. The object of treatment, at this time, independently

of keeping up the strength of the system, *is to cause this false membrane to be detached*, loosened from the mucous membrane beneath it, which, though not in its naturally healthy state, is not *ulcerated*, nor does it offer any obvious structural changes. The only sound principles on which an attempt can be made to detach this membranous exudation, *is to create a healthier or more vigorous vital action in the mucous membrane with which it is connected*. According as this is effected, the *false* membrane is necessarily loosened, and at last is thrown off, expectorated, to the immediate relief of the patient. The means which I have employed to facilitate this result are among the most powerful that can be devised for the purpose.

III. As already remarked, the depression or prostration of the animal system, which characterises diphtheria, renders the successful treatment of the latter a matter of considerable difficulty. There is both local and general mischief, each aggravating the other, and to an extent that is rarely observed in any other disease. An object of the first importance, is to support the bodily strength by food in a concentrated form, as beef-tea, and generous stimulants, the nature and amount of which must be regulated by the age and habits of the patient. Unfortunately it is only in a somewhat early stage of the seizure that ingesta of any kind can be taken. At a later period, when the membranous exudation is thrown out, occupying the posterior part of the mouth, deglutition becomes impossible, or if attempted, such is the acute suffering which it occasions, that the child cannot be induced to repeat the effort.

The task which now devolves upon me, is to state in what way, leaving out of consideration internal remedies, I proceed to treat diphtheria. It frequently happens when the practitioner is called in, that the first stage of the disease is an *advanced* one; but whether such be the case or not,

there is no time to be lost in an *expectant* kind of practice, which, as generally understood, *implies confidence in the weakly aided efforts of nature*. Nature is often to be trusted with great advantage, but not on occasions like the present. Left to herself there would be no re-action, no arousing of her energies to arrest and correct existing evils.

The first thing is to insist on the patient being confined to bed. This is not only necessary in order that proper means may be employed, but for the purpose of securing an easy and comfortable position for the body, an equable temperature of it, which cannot be maintained under other circumstances, and also freedom from exciting or irritating causes. These conditions are not of trifling moment. In every case of disease in which danger is to be apprehended, it is of primary importance, and in this light should be regarded by the practitioner, to enlist into his service every agent and influence that will in any way aid his remedial exertions. If the weather be cold, the bed-room should be kept at an agreeable temperature, attention being given at the same time to the perfect ventilation of it. Whether the patient be a child or an adult, I order a worsted stocking, or the long half of one, to be steeped in hot water, wrung out, and then wrapped round the neck, placing over it a piece of oiled silk or mackintosh. The stocking to be re-immersed every two hours, or oftener, according to the exigencies of the case.*

Friction and fomentations to the abdomen are adjuvants of extraordinary value. The former, if the symptoms are

* My reason for employing a stocking, instead of flannel, is, that the latter, as ordinarily used, is a very inefficient application. It does not keep up any considerable body of heat, which is the desired and important object, not only in the treatment of diphtheria, but in all throat affections. What is done in this way should be done *efficiently* or not at all. Half measures are not half cures.

urgent, and the disease unmistakably progresses, should be used every three or four hours, and fomentations, applied as previously recommended, should be perseveringly enforced. It must be kept in mind, that the end which is contemplated in the employment of these means, is to stimulate the nerves of the abdominal viscera, to quicken and invigorate the circulation of blood in them, and if these measures be carried out such effects will be certain to follow. Is it possible to imagine, that in directly influencing a multitude of nerves, and the nervous centres from which they are derived, and exciting to lively movement a mass of blood which would otherwise become seriously disordered in its distribution and vitiated in its properties, the animal system generally does not participate in the salutary changes induced? Such a conclusion would display gross ignorance of the structure and functions of the body, and of the laws which govern vital action. All parts of the human frame are bound together and blended into one grand whole. Hence to affect the vital condition of any important organ, and especially of a series of organs, as by the employment of the remedies in question, is to impart new life to every organic fibre.

When we take into consideration the intimate connection between the pharynx, larynx, and trachea, one or more of them the seat of diphtheria, and the abdominal viscera, it is evident that the former organs will be powerfully influenced by the beneficial changes produced in the latter, probably in a far higher degree than any other portion of the animal system.

It is only when disease presents itself in an aggravated form, and experience proves the severity of its character, its tendency to terminate fatally, that unusual remedial efforts are required. It is then that the practitioner has to bring to bear to the fullest extent the resources of his skill and art; and happy it will be for the patient, if the liberality of his mind allow him to throw aside the prejudices of educa-

tion, and to look beyond the ordinary *routine* of daily practice, often narrow in its aim, and limited in its means of doing good.

In addition to the foregoing remedial measures, when the disease justly creates alarm, is the frequent application of friction to the spine, particularly to the cervical portion of it. Its physiological action, in this situation, has been fully explained; nor can it for a moment be doubted, that the nerves which proceed from the spinal cord of this region, and from the medulla oblongata, will be stimulated at their origin, and in consequence will carry a more abundant nervous current to the organs to which they are distributed, among which are the air-passages suffering from diphtheria, from the membranous exudation threatening suffocation: *the detachment of this foreign substance depends on the establishment of a healthier condition of the mucous membrane on which it is super-imposed.*

Hypothesis may be attractive and theory seducing, yet both may be destitute of a solid foundation; and in no scientific pursuit is this more frequently the case, than in attempts to explain the phenomena of life, to show in what manner they become disordered, and how remedies act in the correction of them. It, therefore, becomes necessary to state what are the results which practical experience furnishes in reference to these adjuncts, in conjunction with homœopathic agents, the chief of which have been *aconite*, *belladonna*, *mercurius*, *arsenicum*, and *phosphorus*.

The cases of diphtheria which came under my care, during the prevalence of the disease in this town in which the mortality has been great, varied in degree of severity, especially towards the decline of the epidemic. Some of them were comparatively mild, others exceedingly aggravated. Several, which were of this character, were those of adults. When consulted in an early stage of the affection, the mem-

branous exudation, in the form of a small patch on one tonsil, occasionally on both, was, with very few exceptions, promptly arrested in its progress. At a later period, when it had assumed the condition of a false membrane, occupying a considerable portion of the posterior region of the mouth, the determined and energetic use of the means described, very seldom failed to interrupt the further extension of the malady; and by creating a healthier state of the mucous membrane, the natural and inevitable effect of these general remedial measures, the connection between this membrane and the membranous deposit became loosened, and the latter was thrown off in successive shreds.

If others will apply these means, as they have been enforced by me, they will be equally gratified with the results. The remedies are not the suggestion of empiricism, or the offspring of a lively and ingenious mind unacquainted with the animal system in health and disease. The working out and the establishment of the views which are here laid down, have cost much laborious thought and years of unremitting study. If their foundation be not that of truth, shown to rest on sound and unquestionable physiological and pathological principles,—the writer will gratefully acknowledge his obligations to those who will expose the fallacy of his reasoning or of the deductions he has drawn. He has no desire for distinction on the ground of novelty, but he has for that which is true.

His apology, if one be required, for the extended physiological researches into which he has entered concerning the structural and physiological relations existing between the abdominal viscera and the great nervous centres, on the one hand, and the respiratory organs, on the other, is the unquestionable practical value of them,—their direct application to a class of diseases, which are among the most frequent and serious that come under the notice of the phy-

sician. The confidence which is expressed throughout this work in certain general remedial measures, is inspired not by theory only, but by the results of daily experience; and, to use the just and forcible language of a high authority, "To hesitate in conveying instruction, and in employing remedial means, betrays insufficient knowledge, and has never been rewarded by more than accidental success; but a firm conviction and expression of the truth of what is stated or advised, will generally produce belief in the mind of the reader or hearer. Hesitation rejects, where it fails in suggesting, further investigation: confidence commands belief, even when further research is required, and obtains success as its reward."*

It must not be imagined by the reader, that in the earnest advocacy of certain adjuvants in the treatment of disease, I am in any way departing from the acknowledged principles of homœopathy; or, in fact, implying a weakness of faith in the remedies which they prescribe. Either conclusion would be false. The illustrious Hahnemann was not insensible of the advantage of means which come under such designation, though in his day, from the state of science generally, but particularly from the limited views entertained of the functions of life, they were not much studied, and those which were known were very imperfectly appreciated. He expressed, however, a favourable opinion of animal magnetism, as an occasional remedial agent; and, considering the ridicule with which the subject was then treated, and long afterwards, this was creditable to his liberality and intelligence. In this, as in other matters, he displayed one of the characteristic features of his mind,—a restlessness to inquire after truth, and a daring to think for himself. In recent times, the water-system has found among the homœopaths

* COPLAND, *opus cit.*, vol. i., Preface, p. xxvii.

its most enlightened and decided advocates; nor has the valuable method of Ling, curing diseases and strengthening the body by the varied and judicious exercise of the muscles, been disregarded by them as a remedial adjunct.*

A writer, whom I have great pleasure in quoting, observes: "A great deal of nonsense has been written by certain homœopathic *purists* on the subject of non-homœopathic auxiliaries, as well in this country as abroad, which I think we might have been spared, had the writers allowed their common sense to guide them instead of their prejudices. It seems as though they held it to be a species of high treason towards Hahnemann to cure patients in any other way than by homœopathic medicines; but it should be remembered that the mission of the physician is to investigate every method of treatment that seems likely to benefit his patients, and that, when any new method is presented to him, his first inquiry should be not, Is this homœopathic? but, Is this useful in the treatment of disease? The most rigid self-styled Hahnemannian can scarcely fail to employ in his practice many remedial means for the cure of his patients which the wildest imagination could not pronounce homœopathic—such as regulated diet, air, exercise, fomentations, poultices, compresses, cold bathing, lavements, etc."†

* One of the most accomplished physicians of the day, Dr M. J. Chapman, has, as previously stated, recently introduced the subject, in a well-written pamphlet, to the notice of the public, and it richly merits the attention of the profession.

† *Lectures on the Theory and Practice of Homœopathy.* By R. E. DUDGEON, M.D.—This work, is in many respects, the most interesting and instructive that has hitherto appeared on Homœopathy. It is full of varied information, exhibiting a just view of the past and present state of the Hahnemannian doctrine; and it is written in a style that carries the reader unconsciously along its pages. It is evidently the result of much labour, thought, and research; and, while it may be studied with great advantage by the profession,—*especially from the liberal and enlightened tone which pervades it*,—it is not less applicable to the wants of the non-profes-

The next subject on which it is my intention to make a few remarks, is Croup. Several medical authorities, whose opinions always command respectful consideration, regard this and diphtheria as the same disease; they have certainly one pathognomonic symptom in common,—a membranous substance thrown out and occupying the air-passages. If, however, a difference in the organs ordinarily attacked by these affections, and in the local and constitutional phenomena which fall under notice, are grounds for a distinction, these diseases may with propriety and advantage be studied apart. It will be admitted that, in some cases, the discrepancy between them is fine or may not exist. The question is, Do they, as they usually manifest themselves to the practitioner, offer differences sufficiently striking as to lead him to suppose that they are not the same maladies? My own opinion, the result of personal observation of these diseases—the one as it has recently prevailed in this town and neighbourhood as an epidemic, and the other as it frequently occurs in an isolated form—is that they are not the same. The early, but unequivocal, symptoms of croup, indicate an affection of the larynx and trachea,—frequently of the latter only in an aggravated degree: whereas, in diphtheria, the tonsils, the soft palate, and uvula are first attacked. We have *pharyngitis*, inflammation of the pharynx, and not *laryngo-tracheitis*. Such certainly are the differences which, as a rule, characterise the two diseases, and are admitted by writers who make no distinction between them. M. Gendrin, who has written an elaborate and valuable work on inflammation, in treating of diphtheria, observes: “Que la phlegmasie ait commencé au *pharynx*, comme on l’a vu

sional public anxious to learn what Homœopathy is. It has one distinguished, and too rare a merit,—the thoroughly frank, candid, and independent spirit by which it is characterised. This imparts a peculiar charm and value to the work.

dans les paragraphes précédents, et comme M. Gersent pense, au rapport de M. Louis, que cela arrive dans *les cinq sixièmes des cas*.”*

Broussais, who devotes considerable space to the investigation of diseases of the air-passages, differs in several important respects from the views of M. Bretonneau. The latter contends for the identity of diphtheria and croup, and asserts that the inflammation, which constitutes the latter malady, *never commences in the larynx*, an opinion which is certainly at variance with the observations of the profession generally. On this point Broussais observes: “La question est donc s’il existe un croup *primitif*, et l’on doit y répondre affirmativement; car cela est montré par les traités les plus modernes de MM. Bretonneau, Bland, Emangard, &c. Celui de ce dernier surtout, remarquable par sa franchise et sa simplicité, exempt de ces détails inutiles et de cette facon de dont tant d’auteurs abusent pour obscurcir les questions, est rempli de faits nombreux constatant le croup *primitif* dans le larynx, et de guérisons obtenues en faisant expirer l’inflammation à son début. La même chose avait été prouvée par la plupart des ouvrages publiés pour le prix Napoleon.”† Whilst Broussais admits that such a distinction occasionally exists, he, nevertheless, regards the two diseases as the same affection, and the same principles of treatment are prescribed, the chief of which are the application of leeches to the external region of the larynx, and the free exhibition of calomel,—a line of practice which is condemned by M. Bretonneau, and when enforced was found to be extremely fatal in its results.

The remarkable discrepancies in the views of these two

* *Histoire anatomique des Inflammations*. Par A. N. GENDRIN, M.D. Tome premier, p. 623.

† *Cours de Pathologie et de Thérapeutique générales*. Par F. J. V. BROUSSAIS. Tome premier, p. 408.

writers, and of others, on the nature and treatment of diphtheria and croup, are by no means difficult of explanation. They are mainly to be traced to giving the same *name* to morbid conditions which frequently had very little in common. The term diphtheria has been made to represent affections of the air-passages which were unlike in their seat, in the degree or intensity of the inflammation by which they were characterised, and in the constitutional symptoms by which they were accompanied; and hence the very different modes of treatment recommended, and on the ground, it is contended, of their efficacy as established by experience.

It is evident from a careful study of the lengthened observations of MM. Broussais and Bretonneau, that the same forms of disease were not contemplated or investigated by them. The former constantly speaks of diphtheria as a *purely inflammatory* affection, or as presenting local inflammation of such a type, that to subdue it it is only necessary to apply leeches and give liberal doses of calomel. M. Bretonneau, on the other hand, shows that, conjoined with the existing inflammatory action, there is serious and extensive constitutional disturbance, of a nature that would in most cases be greatly aggravated by the remedies which Broussais considers somewhat in the light of specifics. There is, in fact, marked prostration of the powers of life, and not unfrequently from the commencement of the seizure, or it rapidly supervenes upon the inflammation of the tonsils, uvula, and soft palate. The abstraction of blood at this time, and the employment of calomel in the doses recommended, would so depress the vital functions that recovery would almost be impossible. Such treatment, so far from being found to modify or arrest the course of the disease, is condemned by those who have ventured to put it to the test of experience; nor could it rationally be suggested by the symptoms which fell under observation.

Broussais was a man of whom France may be justly proud. He had a large and comprehensive intellect, enriched by varied and extensive knowledge, and during a long career was peculiarly favoured by circumstances in the cultivation of professional pursuits. He had opportunities of seeing disease in its diversified forms, and what he saw he studied. He was ever an earnest student, was ever labouring to get a deeper insight into the healthy and morbid conditions of the animal economy, and his efforts were crowned with considerable success. His physiological views, at the time he wrote, were in advance of those which were then entertained, *especially in their practical application to the disordered states of the animal system*: in this application, however, he committed serious errors which tend greatly to diminish the value of his works. These nevertheless deserve to live. He erred in ascribing disease generally to inflammation. This he imagined to be the cause of almost all structural changes; and hence the depletory remedial measures which he employed. The simplicity of his practice created numerous followers, but the views on which it was based have been prejudicial to his fame. They did not accurately represent the diversity which marks the origin and nature of morbid affections. His other leading fallacy, which pervades more or less his pathological researches, is his constant reference to *gastro-enteritis*, inflammation of the bowels, as the source of a wide variety of maladies which are seated in other regions of the body. Many of the cases of diphtheria described by Bretonneau, are adduced by him as illustrations of the fact, but independently of clearly established data: his reasoning and the conclusions he draws, on other occasions, are not less exceptionable.*

It is here important to remark, that Broussais, in his

* *Opus cit.*, vol. i. p. 350.

doctrine of *gastro-enteritis*, was bordering on the discovery of a valuable pathological principle, which has been fully elucidated and practically applied in the course of this work, viz., *the tendency of the blood, in severe forms of disease, whatever be the organ attacked, to accumulate in the abdominal viscera*, the accumulation or consequent congestion of the latter giving rise to symptoms during life, and to appearances after death, calculated to impress the pathologist with the idea, but certainly on insufficient grounds, that the malady, which prominently displayed itself in some other part of the body, *originated in the disturbance of the viscera in question*. This disposition of the blood to such changes in its distribution was not realised by Broussais as a law of the circulatory system, when the vital functions generally are suddenly weakened and disordered. As already repeatedly stated, when the blood becomes abnormal or irregular in its motion, a result inevitable in all aggravated affections, it gradually retires from *without, inwards*,—is thrown in variable proportions upon the abdominal viscera. It is in a great measure from the existence of this state of things that friction to the abdomen, in cases of fever, dysentery, diarrhœa, and other disorders, which have been brought under notice in the foregoing pages, exerts its beneficial influence. Broussais, in the study of the morbid phenomena which he regarded as proving the presence of gastro-enteritis, very frequently mistook the *post hoc* for the *propter hoc*, the effect for the cause.

These observations on the views of this distinguished pathologist are not altogether out of place in this introduction to the consideration of croup, which, by some able writers, as already observed, is confounded with diphtheria. Broussais admits, that there is occasionally a distinction between them, manifested by a difference in the air-passages implicated, and the symptoms by which they are characterised.

He remarks: “Je ne dis donc pas qu’il n’existe point une diphthérite telle que M. Bretonneau la décrit; *mais je soutiens qu’il peut y avoir des croups primitifs*. Est-ce que cet auteur a eu les yeux fermés sur ces croups?”*

The precursory signs of croup are exceedingly variable. Sometimes they are well marked, and clearly indicate the nature of the evil which is to be apprehended; the shrill, croupy cough being among the first symptoms which particularly arrests the attention of parents. In many instances the patient, who has retired to rest apparently in his usual health, is awakened during the night by a distressing fit of coughing, which is at first dry, but is soon succeeded by the expectoration of a viscid matter more or less purulent in its character. More generally the disease is preceded by alternating chills and heat, the countenance is by turns flushed and pale; fever is gradually developed,—the skin becomes hot, the pulse is accelerated, and increased in strength, thirst is experienced, the tongue is furred, the appetite fails, and there is a peculiar shrillness in the voice which has been likened to the crowing of a young cock, or it is hoarse, low, and deep. “At the same time,” quoting the words of Dr Cullen, who has accurately described the progress of the disease, “there is a sense of pain about the larynx, some difficulty of respiration, with a whizzing sound in inspiration, as if the passage of the air was straightened. The cough, which attends it, is sometimes dry; and if anything be spit up, it is a matter of a purulent appearance, and sometimes films resembling portions of a membrane. Together with these symptoms, there is a frequency of pulse, a restlessness, and an uneasy sense of heat. When the internal fauces are viewed, they are sometimes without any appearance of inflammation; but frequently a redness, and

* *Opus cit.*, vol. i. p. 409.

even swelling appear: and sometimes in the fauces there is an appearance of matter like that rejected by coughing. With the symptoms now described, and particularly with great difficulty of breathing, and a sense of strangling in the fauces, the patient is sometimes suddenly cut off."

The acute inflammation which characterises croup is usually confined to the larynx and the upper part of the trachea. It occasionally ascends higher, but more frequently descends lower, affecting the whole of the trachea and bronchia, giving rise to the exudation of a false membrane varying from half a line to more than a line in thickness. The albuminous and fibrinous matter as it is thrown out, readily concretes from the action of the inspired air, and is moulded into the exact form of the air-passages on the surfaces of which it is secreted. The consistency and thickness of it differ greatly according to the robustness or vital energies of the constitution and the intensity of the inflammation, but in my opinion chiefly from the former circumstance. The false membrane is sometimes thin, soft, and scarcely at all tenacious; at other times it exists in isolated patches, or is too partially developed to assume a distinct tubular form: it is generally, however, of this character, and its consistence is about that of boiled white of egg. In plethoric and vigorous children its firmness is much greater. I had once a case under my care in which a portion was coughed up nearly an inch in length, and little short of two lines in thickness, which was remarkable for its toughness and elasticity. The expectoration of this did not permanently relieve the patient: he died two days afterwards.*

The membranous exudation, when it has acquired its ordinary consistency, has no firm attachment to the mucous mem-

* This morbid specimen was at the time presented to the Sheffield School of Medicine.

brane beneath it: this continues, though imperfectly, to exercise its natural functions, one of which is secretion, the product of which may be vapour condensed into a watery fluid from its inability to escape, or it may be morbid matter. In either case it breaks the connection between the false membrane and the mucous tissue on which it is super-imposed: and hence the readiness with which the former is frequently expectorated, but rarely affording substantial benefit to the patient, as it is usually only partially ejected; but even when the whole has been removed by repeated fits of coughing, successive layers of the same kind, if the inflammation be unsubdued, are formed, differing only from those originally thrown out in being thinner and of less consistency. The patient, however, is generally cut off during the presence of the first membranous exudation.

Writers are not quite agreed as to the cause of death. By some it is supposed to arise principally from spasm of the glottis by which the entrance of air is excluded, it being contended that the false membrane always allows a passage for it though in a diminished degree. Others, and with great force of truth, allege that various diseased conditions concur in inducing a fatal issue. The false membrane which lines the trachea greatly lessens its capacity; nor is it unreasonable to imagine that a portion or portions of this membrane become in part detached, creating a physical obstacle to the introduction of air; and hence the suffocation of the child, whether in a fit of coughing or otherwise. This supposition I throw out as an extremely probable circumstance, considering the slight adhesion which exists between the membranous exudation and the mucous tissue on which it lies,—an adhesion which gradually diminishes after the perfect concretion of the former. It is, moreover, urged, that even when the exuded matter, in a tubular form, does not extend to the larger divisions or branches of the trachea,

that these, as well as the smaller air-tubes or bronchia, are often filled with a purulent-like substance or viscid fluid,—a fact which has been established by numerous dissections. In this case it is clear that the process of respiration will, according to the accumulation of such matters, be impeded and finally arrested. It is further important to remark, that in those who die of croup, the lungs, as well as the vessels of the brain, are generally found in a highly congested state; so that, independently of the affection of the air-passages, there are other conditions, as the excessive accumulation of blood in the organs mentioned, which will materially conduce towards a fatal termination. It is not here intended to deny altogether the agency of spasm of the glottis as a cause of death, but rather to show that there are other circumstances which conjointly will be admitted to exercise a more potent influence. Spasm was formerly the prevailing doctrine of the day, and was employed to account for a great variety of morbid phenomena, which are now either otherwise accounted for, or regarded as explicable on other pathological principles: it is, however, yet abused in its application.

The most instructive and interesting branch of the inquiry, connected with the consideration of croup, is the character of the inflammation of the air-tubes, and of the natural co-existing vital functions of the constitution at the time, which have not been accurately or comprehensively seized by any writer, as will be easy to prove; nevertheless just views on this subject are necessary to explain the secretion of the membranous exudation, and will have a pertinent practical bearing on the treatment of the disease.

It is in infancy and childhood that croup almost exclusively occurs. Very rarely beyond the latter period. It is shown by an analysis of numerous cases that it is most frequent between the first and seventh year, and that the predisposition to it greatly declines from the seventh to the

fourteenth year; and in an uncomplicated form is very seldom observed in the adult. In the few instances which are recorded by writers, it is doubtful whether these were true examples of the malady, presenting, as in the young, a distinct membranous exudation occupying the larynx and trachea, or more especially the latter organ. But be this as it may, it is clear that such cases are of rare occurrence; and further, that certain conditions of the animal system characterising the young are essential to the production of the false membrane. Hence the inquiry, What are these conditions? Writers have thrown no light on this point. They do not attempt to explain it beyond stating, that the inflammation of the mucous membrane which gives rise to it is either *mild* or *peculiar* in its nature,—not *acute* as it is often in the adult when no such fibrinous exudation is thrown out. In this view of the subject the highest medical authorities are agreed. If the morbid effect,—the secretion of this foreign substance,—is the natural consequence of the comparative *mildness* of the inflammation, how is it that inflammation, the same in degree, does not in after life equally occasion it, as cases of this kind are far more common than those in which the inflammation is extremely acute? No answer has been given to this question, which ought to have presented itself to the mind.

In treating of this subject it is stated by Lænnec, evidently embarrassed to account satisfactorily for the production of the membranous exudation, “that it is much less to the *degree* than to the *nature* of the inflammation, that we are to attribute this concretion or coagulation of pus in certain cases. Indeed the cause of it is much more probably to be attributed to some peculiar disposition of the fluids, than to any affection of the solids.” He further observes: “The wide extension of this plastic inflammation of the mucous membranes, and its affecting parts very distant and even

unconnected with each other, might lead us to suspect, at least, that its cause is rather some special alteration of the fluids than a primary irritation of the membrane on which it is developed."* The wide extension of this plastic inflammation, or inflammation distinguished by the membranous exudation, will be found to be explicable on the views which will be here brought forward.

"MM. Gendrin and Andral," observes Dr Copland, "and other pathologists, have remarked that the inflammatory action which gives rise to the albuminous exudation on the surface of mucous membranes is of a sub-acute, rather than of an acute kind. I believe that this is the case in respect of the inflammation of the trachea and larynx, in croup, and that the formation of a false membrane is the result not so much of the sthenic or acute character of the local action, as of the abundance of albumen and fibrine in the blood,—a circumstance which partly accounts for the frequency of relapses in some children, and justifies Harles, Hecker, and others in considering the disease to consist of a *peculiar form of inflammation*."†

The same views were entertained by Broussais. "Il a été vu," he says, "sous une foule de formes qui peuvent se reduire à deux, l'une, *purement* inflammatoire, sans fausses membranes, l'autre, plus commune à beaucoup près, *moins inflammatoire* et avec sécrétion de fausses membranes. Cette distinction est importante pour considérer cette maladie en même temps chez l'adult et chez l'enfant. Il est certain qu'on observe chez le premier des phlegmasies muqueuses

* *A Treatise on the Diseases of the Chest, and on Mediate Auscultation.* Trans. by JOHN FORBES, M.D., pp. 123-129. In ascribing the disease "to some peculiar disposition of the fluids," Lænnec was near reaching a just view of the subject. He was, however, a pathologist, and not a physiologist; and hence he stopped short of the truth.

† *Opus cit.*, vol. i. p. 461.

du larynx violemment inflammatoires, sans supersécrétion, et fort différentes de celles du second.”*

In treating of this disease Mason Good states, that “in the greater number of cases, the degree of redness and swelling is less, than in many instances of dry catarrh. We cannot, therefore, attribute the plasticity of the secretion in croup, the distinctive feature between it and the mucous catarrh, simply to a *higher degree* of inflammation; but rather to the *peculiar nature* of that inflammation.”†

Such are the opinions expressed by some of the highest authorities of modern times concerning the character of the inflammation in croup. They concur in regarding this inflammation as not *acute*, but sub-acute, or *peculiar* in its nature. They state that it is much less intense in degree than that which frequently attacks adults, in which there is the entire absence of the false membrane, not being at all aware, that the cause of the discrepancy is to be found *in the difference of the vital conditions of the mucous membrane in the child and the adult, but particularly in their constitutional endowments*, the explanation of which is to be sought in physiology and not in pathology. The inflammation of the mucous membrane of the larynx and trachea in the young, is as *intense* as local organic and constitutional circumstances will allow. The inflammation is not mild or sub-acute, but *acute*, but the acuteness of it has an issue or means by which it is relieved or subdued, a fact that has been altogether lost sight of by writers. Such an issue or such means do not exist in the adult.

The animal system of the infant, at birth, may be likened to a bud destined to break into leaf or flower. The life-imparting power is within, and according as this is strengthened, additional vital resources are transmitted from within,

* *Opus cit.*, vol. i. p. 399.

† *Id.* vol. i. p. 447.

outwards, giving to the leafy and floral appendages of the plant the beauty and luxuriance which mark their perfection or maturity. The delicately balanced vital energies of these external appendages in their early development, is seen in the effects of cold or frost upon them. They are at once nipped or seriously injured. The life within is insufficient to maintain in lively and vigorous movement the sap or fluids on their outspread surfaces; or in other words, the fine channels through which their nourishment is diffused, are, at this time, incapable of resisting the external influences to which they are exposed.

The successive stages of growth in the young of all species display conditions analogous to those of the bud; but the higher and more varied organization of animated beings, will enable us to illustrate with much greater force the physiological principles which it is intended here to unfold.

The viscera of the child, as the heart, the lungs, and the digestive apparatus, have, as compared with the external parts of the body, much greater vital activity than exists at a later period, and from this obvious consideration: They have not only to meet the daily requirements of animal and organic life, in harmony with the daily expenditure of vital power, but they have to create an additional amount of nutritious elements which has to be applied to the general development of the entire animal frame. To provide this necessitates in them more vigorous vital operations, relatively to those of the external structures, than what characterise the adult. Nature, in the young, is ceaselessly working from *within, outwards*, not simply to keep up the existing vital conditions, but to enlarge and strengthen these, so that at length the cutaneous tissues acquire an activity corresponding to that of the internal organs. Numerous physiological and pathological facts establish the correctness of this view.

It will not be questioned that the appetite of the young, when unpampered, is keen, evidence of the soundness and vigour of the digestive functions; nor, according to the development of the animal system, that they make larger demands for food than at a more advanced period of life. The great nervous centres, as the brain and spinal cord, like the thoracic and abdominal viscera, are active, operating from *within, outwards*, in the direction of the senses, the limbs, and the surface of the body; but as yet the nervous power is, as it were, only *learning* to diffuse itself towards the parts indicated, and it is not until the termination of childhood, that the life which exists *without* harmonizes in degree with that which prevails *within*.

The diseases of childhood, as scarlet fever, measles, small-pox, and chicken-pox, are in my opinion facts which prove the extremely feeble vital action existing in the cutaneous tissues; and when they arise independently of infection, they are to be regarded as efforts of nature, either to throw off a something which would be deleterious to the system if retained, or as effects springing out of the successive vital changes which these tissues undergo in the process of *adaptation* to a higher state of activity: and in this case the changes necessarily create matters which have to be emitted; and hence the various eruptions which characterise these affections, and though very different in character, it is not improbable that the *organic* causes in which they originate have much in common.

One important physiological conclusion may be drawn from the presence of these eruptive diseases, viz., that each, the symptoms of which are those of inflammation, and in some of their manifestations exceedingly acute, awakens the external vascular system or blood-vessels to extraordinary vital action, establishing in them a more vigorous condition, — accompanied with a *permanent enlargement*

of them as channels for the circulation and distribution of blood.

The inflammation, by drawing to them a greatly increased quantity of blood, which is an inevitable consequence, arouses them to a wider sphere of duties, the natural tendency of which is to augment their capacity, so that subsequently a more liberal vital current is conveyed to them, which imparts a fresh impulse to the growth of the external structures. The nerves of the cutaneous tissues are equally influenced by the same disease. The excitement of which they are temporarily the seat, acts from *without, inwards*, extending to the nervous centres, as the brain and spinal cord, and the re-action which follows, multiplies and strengthens the nervous relations between *the external nervous surfaces and the nervous centres*.

That physiological effects of this kind will arise from the successive attacks of eruptive diseases, will scarcely be questioned by those who are capable of appreciating the subject, which is now for the first time presented under these points of view. The affections, if they do not occur in an extremely aggravated form, are, in my opinion, salutary, beneficial to the powers of life generally; and are probably to be traced to the influence of civilization and its associated evils on the animal system, creating susceptibilities and vital necessities which would not exist in a less artificial state of society;—necessities that have resulted from the baneful agency of diseases, comparatively of modern origin, tainting and variously corrupting the primal purity of the human constitution. To this cause is to be ascribed the greater part of the maladies which afflict humanity. The impurities of the body are constantly seeking an outlet, and in some cases they are thrown off: in others, the morbid conditions to which they give rise are fatal.

It would certainly be considered rash were one to indulge

even in a conjecture, that the discovery of Jenner, protecting the great majority of those who have been vaccinated from the attacks of small-pox, may possibly not be an unmixed good or blessing. It must not, indeed, be inferred, for the fact is anything but clear and conclusive, that in correcting a predisposition to one particular disease, a predisposition to another, or disease in very diversified forms, in after life, is not at all to be apprehended. If it be admitted, that there are impurities in the body, varying in degree in different individuals, transmitted through successive generations, or from a parent to his offspring, originating in disease imperfectly cured or incurable; it cannot reasonably be denied, if the physiological relations of the skin to the whole of the internal organs be kept in mind, that natural small-pox, from the pustules to which it gives rise, provides extraordinary issues or outlets for the discharge of morbid matter,—matter which existed at birth. The eruption is a cleansing and purifying process. It differs greatly in its character in different individuals. In many it is mild, in others exceedingly severe. The discrepancy in the degree and nature of its manifestations, for it is diverse in both respects, *is altogether owing to a difference in the amount of morbid matter present in the animal system, and the eruption furnishes an occasion for its escape. The susceptibility of the system to small-pox, whether vaccination has been employed or not, will depend largely on the same cause, varying with its multiform modifications.*

It may possibly be asked, if I fail to take into account the ravages of small-pox previous to the introduction of vaccination? In answer to this I may say, that my own decided impression is, that the disease, *as a natural consequence of its purifying influence*, would gradually become milder, would substantially wear itself out, *the constitutional necessities being weakened which are the occasion of its malignity.*

Before the discovery of Jenner some persons were unsusceptible of small-pox; many had it in an extremely mild and modified form, while others displayed it in all its severity. What was the cause of these diversified effects? It is not to be sought in a difference in the effluvium or contagious agent which gives rise to the disease, but to constitutional differences: and is it not reasonable to suppose that these consist in the more or less sound state of the animal system, in the greater or less amount of impurities which have descended from one generation to another, and how much have been so transmitted! How greatly the evils to which flesh is heir preponderate in civilized over savage life, or a state of society exempt from the vices and corruptions which march in the train of what is designated civilization! What do our great towns exhibit to the general observer, but more particularly to the keen and discriminating eye of the medical practitioner? What a mass of disease is daily being produced tainting and distempering the human body, disease springing out of vicious habits which is faithfully conveyed to a subsequent generation.

Concerning the mode in which vaccine matter acts upon the animal economy it is at present in vain to speculate. It affords, as a general rule, protection against small-pox, but in what way or on what principle is a mystery. It is, indeed, remarkable that a fluid taken from the *sores* of a cow should exercise this influence; and somewhat strange if we reflect upon the subject, *that a substance which is the produce of obvious disease should be introduced into the human body.* It prevents the occurrence of a disease accompanied by an eruption, but in doing this, according to the line of argument which has been pursued, it allows no outlet for the evacuation of impurities. These, whatever may be their nature or amount, are retained, nor will the retention of them be harmless.

It is contended by several respectable authorities, that since the introduction of vaccination, consumption, scrofula, and other affections have been much more common than previously, and this is ascribed to the arresting of a natural disease. Many diseases are the inevitable results of the prevailing constitutional conditions of society, conditions not temporary, but such as exist with slight modifications for vast periods. Small-pox, measles, chicken-pox, and syphilis, are among the maladies which were unknown to the ancients. They have left no description of them, and they were accurate observers. Sir Gilbert Blane, and in my opinion justly, remarks, that "there may be new maladies awaiting our species, which are still to develop themselves under the endless combination of the incidents of human life through endless ages to come."*

"By what means," observes a learned writer, "variolous contagion received by a *puncture* becomes so much milder, than when received from the atmosphere, is a problem that has never been satisfactorily solved."† There is a striking difference between the two; an important physiological condition in the one case, which has been entirely overlooked, that will be found to furnish the desired explanation. When the disease is received through the medium of the atmosphere, it disorders the animal system, produces fever, and creates the necessity for an outlet for morbid matter, but no outlet exists; and hence the numerous pustules which appear on the surface of the body, evidence of constitutional difficulties, and of the amount of impurities seeking an issue. When the arm is punctured for the introduction of the vaccine virus, local inflammation follows, and ultimately a pustule is formed, which from its earliest stage of development has

* *Select Dissertations on several subjects of Medical Science*, p. 214. 8vo. London, 1823.

† MASON GOOD, *opus cit.*, vol. iii. p. 122.

been in the character of an *outlet*, in direct relation to every part of the animal frame, and though small, sufficient as a vent for that, which, if it had no such escape, would aggravate the disturbed functions of life; until at length nature roused to extraordinary exertion, struggling for existence, throws it on the cutaneous surface. The single pustule on the arm relieves the system in its *incipient* vital commotion and derangement, and it is the relief thus rendered that accounts for the calmness and apparent well-being which results.

This explanation will be objected to by some, on the ground that a single pustule could not possibly exercise this marked influence on the animal economy. The objection will scarcely, however, be urged by the few who are familiar with the exquisite and marvellous susceptibilities of the animal system, the nervous relations which combine all the living structures into one comprehensive whole; and who have studied the effects of small issues, extremely circumscribed eruptions, and other circumstances, on the health of individuals. Head symptoms, to appearance threatening apoplexy, are occasionally promptly and effectually relieved by the flow of three or four drops of blood from the nose; and a small chronic eruption on the face on being suddenly removed by the application of external remedies, has sometimes given rise to hæmoptysis or discharge of blood from the lungs;* and other cases of a similar character might be adduced, showing how an apparently trifling cause is capable of influencing in a powerful manner the vital conditions of the animal body.

These few remarks on eruptive diseases were naturally suggested by the considerations entered into concerning the degree of functional activity possessed by the cutaneous tis-

* A case of this kind once occurred in my practice.

sues in the young; and though they have no necessary connection with the subject which was under discussion, viz., croup, they may not be altogether unacceptable or uninteresting to the reader. They are intended to excite thought and inquiry on matters which have not hitherto received much if any attention.

On one or two of the topics which have been here touched upon my convictions are strong, viz., as to the presence of a morbid virus,—a latent principle of disease,—tainting, in various degrees every individual constitution, to the baneful influence of which is to be ascribed the greater part of the acute and chronic affections which affect humanity, and the too frequently incurable character of the latter. These facts must be self-evident to the reflecting mind at all acquainted with the origin and nature of disease, the sources of which on numerous occasions are involved in no doubt. Vaccination produces a specific effect, in general affording protection against small-pox, but not against other febrile cutaneous affections common to childhood; nor does it at all correct a constitutional taint or unsoundness. Its agency is limited to one result,—the prevention of one particular malady; but in all probability at the expense of a great amount of good which the cleansing process of small-pox would confer, even in its mild forms, *and such would ultimately be its character as a natural consequence flowing from its uninterrupted purifying influence.**

There is not a greater or more serious error, than in concluding, that because an eruption is prevented, a positive

* I have often remarked, that persons who have had small-pox, as was evident from external indications, generally appeared to possess excellent constitutions. Farther, I know some families in which the mortality has been remarkable from consumption: in some cases only one, and in others only two children out of six and eight, have attained the age of twenty-one, and of these two, one has a life-struggle against the symptoms of the disease; while the other, who is healthy, has had small-pox. During a long

benefit accrues to the animal system. Many diseases are incurable until an eruption of some kind is thrown out; and many more fail to be cured from the inability of nature to relieve herself in this way. Boils for the last few years have been epidemic in this country, and it is not irrational to conceive, that vaccination, conjoined with atmospheric electric conditions, is in a great measure the cause. They have been salutary in their effects.

To illustrate the force of these remarks, I will mention a case which recently came under my care, one out of many that might be adduced. Such instances are familiar to every observant physician. The patient was suffering from aggravated dyspeptic symptoms. The tongue was more thickly coated with a dirty brown fur than I had ever seen in any disease. He had been treated by different allopathic practitioners for two years without any improvement; nor did he, during six or seven weeks derive any advantage from the means employed by me. Dissatisfied by my want of success, I inquired if he had had any eruption the last few years which had suddenly disappeared. His reply was in the negative. I asked if he had had boils. After some hesitation and reflection he stated he had one about three years ago, which by an external application he very soon cured. It never came to a head. This was a gleam

professional career, in which numerous cases of phthisis have been under my care, having given more than ordinary attention to the disease, I do not remember a case in which the individual had had small-pox, as indicated by the pitted countenance.

My observation of facts of this kind has not, however, been sufficiently extensive to allow me to deduce from them any positive or dogmatic conclusion; and it is partly on this account that I suggest them to the consideration of others. Multiplied observation will either refute or establish the soundness of the inference that apparently flows from them. The inquiry merits the attention of the profession. My own children have been vaccinated, but had they not been, and were still young, no law should compel me to submit them to such process.

of light to guide me. I gave him sulphur in homœopathic doses. In a fortnight two boils were the result of its action, and in as short a period further medical treatment was rendered unnecessary. The tongue rapidly cleaned, the appetite returned, and the individual regained his usual spirits, which previously had been greatly depressed. Let the reader, who may be sceptical as to the soundness of the line of argument which has been pursued in the foregoing pages, reflect on this fact, and follow its suggestions to their practical application.*

In a book of travels just published, giving the missionary labours of a gentleman well qualified to write such a work,

* The following case bears in a remarkable manner on the views which are here brought forward. Some time ago I was requested to visit a child in a respectable family. It was between five and six years of age. It was suffering from intense inflammation of both eyes, accompanied with a copious discharge of pus or matter. The child had been under the medical treatment of a surgeon reputed skilful in eye diseases, but without any melioration of the symptoms. It was at once evident to me that the nature of the disease was *syphilitic* inflammation, that is inflammation originating in a *syphilitic taint of the constitution*. This opinion of course could not be stated. It was my business to cure the case. The symptoms yielded very slowly to the treatment employed, which from their severity was to be expected. In about three months the child was quite well. Six months afterwards the mother consulted me for an eruption on the skin, the character of which were circumscribed patches, some of them as large as a sixpence, of a yellowish or dirty brown colour, the unmistakable indications of one form of "secondary symptoms,"—symptoms consequent on syphilis. She suspected this, and stated, that when pregnant of the child that I had attended, the husband communicated the disease to her, and procured remedies, to avoid exposure, which cured the then existing symptoms. The fact to which I wish to direct attention is this. Had this child, instead of being vaccinated, taken the small-pox, *the discharge of impurities from the skin would, I have no hesitation in stating, have carried off the syphilitic poison*. This remains in the child, and should the latter grow to womanhood, marry, and have offspring, the vice of the parent will show itself, in some form, in an unborn race; it may be consumption, scrofula, rheumatism, a peculiar susceptibility to inflammation, constitutional weakness, skin disease, or some obvious disorder of the animal system: nor will the syphilitic poison die with that generation.

from his intelligence, and eighteen years' residence in Eastern Africa, occur these words, speaking of the Dokos, a race which he appears to have studied with interest: "As diseases are unknown among them, they die only of old age, or through the assaults of their enemies." On this passage the reviewer of the work remarks: "The last fact confirms what is beginning to be recognised by physiologists, that what we understand by 'disease,' is entirely unknown among primitive people living in a natural state; but that it is the result of those habits which are the concomitants of our 'civilization.' " *

It is now necessary to return to the investigation of croup, which has been interrupted by these somewhat lengthened remarks on a subject, certainly not void of interest, nor was the transition to it forced or unnatural. In no other part of this work could it appropriately have been touched upon; and hence the present occasion was seized for the remarks which have been made.

I shall first endeavour to elucidate the nature of *acute* inflammation attacking the air-passages in the adult, as it does not give rise to the same structural and functional changes common to the young.

The *cause* of the inflammation is a matter of no moment. It is usually preceded by apparently unimportant symptoms. There is probably hoarseness, a sense of tightness or soreness of the throat, slight fever, with alternating heat and chilliness. The disease advances, sometimes rapidly, at other times slowly and insidiously. At length there is evidence of the presence of acute inflammation, to subdue which, according to the notions of the prevailing school, demands very active depletory measures. The treatment is no part of this inquiry. How intense soever the inflammation may be, *it*

* See "*The Critic*," June 9th, 1860.

throws out no false membrane. The mucous membrane becomes exceedingly vascular, its vessels being greatly congested; and hence the redness which it displays. These effects, and the inability of the mucous membrane to relieve itself by the formation of the fibro-albuminous exudation, may be thus explained. In the adult, the internal organs have established a vital activity on the surface of the body in perfect harmony with their own,—a degree of activity which enables the external tissues to resist many depressing atmospheric influences, which would be fatal or detrimental to the young; and further enables them to resist, to a considerable extent, *depressing influences operating within the body.* The thorough understanding of this fact will satisfactorily account for the absence of the false membrane, though the inflammation which exists may be intense.

In order that the mucous membrane of the air-passages shall have the power of throwing out the membranous deposit, it is indispensably necessary that it *should have the power of drawing to it, and in great abundance, fluids from other regions of the animal system; or in other words, the disease, affecting the organs in question, should, from the natural or induced condition of the body, be followed by this result.* The blood which is present in the mucous membrane is too limited in quantity to furnish the exudation; and from the established vigour of the circulation generally, the blood does not readily retreat from without, inwards, the vessels in which it circulates having sufficient vital activity to retain it; and, therefore, it is not drawn, from the natural weakness or depression of these vessels, in the direction of the inflamed mucous membrane; and unless it were so influenced, this membrane has no superfluous or oppressively redundant fluids to evacuate, which is essential to form the membranous substance. The secretion of this does not depend on any *peculiar* inflammation which is present, *but*

on the nature of the vital relations existing between the mucous membrane and the animal system at large, in connection with ordinary inflammation.

It is unphilosophical to talk of any inflammation being *peculiar*. It is excited or inordinate action of the tissues which are the seat of it; and it differs in character according to the nature of the tissue affected; but were the constitutional conditions of the adult and child the same, the inflammation of the mucous membrane in both would offer little if any discrepancy.

It is here shown that there is a *natural* and an established vigour in the circulatory system of the adult, not only on the cutaneous surface, but throughout the body, very unlike that which characterizes the young, and is the cause of extraordinary pathological differences when the vital powers are disordered by acute and chronic inflammation, and indeed in every form of disease,—differences which have not at all been contemplated by medical writers. There is not one, to the best of my knowledge, who has steadily carried his eye, guided and enlightened by physiology, from the organ, the seat of acute inflammation, to the consideration of the vital conditions of the animal system at different periods of life. Hence the unsatisfactory pathological views promulgated and universally received.

There is a further circumstance bearing on the constitutional differences between the adult and child which it is important to state. Acute inflammation attacking the air-passages in the former, *produces a higher degree of fever, which continues for a much longer period than it does in the latter*. It is clear that its greater severity, and protracted duration, by keeping the blood in active and vigorous motion throughout the body, does not allow *the air-passages, in the intense stage of inflammation*, so to influence the functions of life generally, as to draw, copiously to them, blood from

other regions; and consequently they have not such a superabundance of it as to necessitate its evacuation in the condition of a false membrane. The inflammation is intense, because the blood-vessels affected have no means of relieving themselves of the blood which oppresses them; and to this is owing the injected and florid appearance of the respiratory mucous membrane.

The foregoing observations have prepared the way for studying with advantage the constitutional conditions which in the young give rise in croup to the membranous exudation.

The subject may be studied in three points of view:—

I. The state of the mucous membrane of the air-passages in those of tender age. The blood-vessels at this time have remarkably fine membranous parietes, and when excited by acute inflammation, they in consequence readily permit matters to escape, which concreting as soon as they are secreted, assume the form of the organs on the surfaces of which they are thrown out. In the adult the blood-vessels in the same localities, from their greater maturity of development, and their greater *strength*, having been long subjected to the stimulating influence of the inspired air, offer greater resistance to the issue of morbid matters from within, outwards.

II. It has already been stated, that vascular and nervous action on the cutaneous tissues is weak, and relatively weaker, as compared with that of the internal organs, than it is in the adult, in relation to the viscera. In the young, the vital functions on the surface of the body are at once affected by external and internal depressing causes, and the moment they are so influenced, the blood retires from without, inwards: *it can no longer be maintained in motion on the external regions*. It is on this account that infants, when suffering from disease, will sometimes, in the course of twenty-four hours seem to shrink to half their natural size;

and in a marked, though less degree, the same phenomenon is observed in the young of more advanced years.

III. It is a law of the animal system, that when any organ becomes the seat of acute inflammation, blood flows towards it being an excited vital centre; and it is equally a law, that the amount drawn in that direction *will be in the ratio of the constitutional weakness which exists*. When the air-passages in the child are attacked by acute inflammation, as in the case of croup, depression of the powers of life rapidly supervening, the circulating fluids move towards such centre in great abundance, beyond the ability of the blood-vessels of the diseased tissues to retain them. The delicate parietes of these vessels favour their escape; and hence the false membrane which results. The inflammation which occasions it, is neither *sub-acute* nor *peculiar*, as contended by writers. It is acute, but the acuteness of it is not persistent as in the adult; nor does it, as in the latter, go on from one stage of aggravation to another until, at length, from its intensity death is the consequence. When the inflammation has reached the highest point of which the mucous membrane is susceptible, having drawn to this a superabundance of fluids, these are secreted, thereby affording relief to this membrane, and at the same time subduing *excited* local vital action. The *serous membranes*, which line closed cavities, as the thorax and abdomen, give rise to similar effects, and from the same general causes. When the seat of acute inflammation, they at one time pour out coagulable lymph by which they are united firmly and permanently to adjoining structures: at another time they secrete serum or a watery fluid the accumulation of which constitutes dropsy. The facility with which these membranes are enabled to secrete either kind of fluid, explains why they rarely offer, after death, indications of the presence of intense inflammation; only indeed when death takes place

before the secretion of these matters to any large extent, or perhaps scarcely at all. But this is not often the case. The discharge of them relieves the *serous membranes*, as the evacuation of the fibro-albuminous exudation relieves the mucous membrane of the air-passages.

The accuracy of this explanation is established by unquestionable facts. When the first false membrane has been expectorated in croup, it is sometimes succeeded by a second, and occasionally by a third, but each subsequent membrane is much thinner and less firm than the first. This has not only greatly relieved the mucous membrane of the fluids which had been drawn to it, but the secretion of them has so weakened the vital energies of the affected tissues, that they are not in a condition to excite and keep up acute inflammation.

The readiness with which false membranes are formed in the air-passages has been ascribed by writers to the heat of respiration, and that of inflammation. "Je pense," observes Broussais, "que la facilité avec laquelle les fausses membranes se forment dans la larynx dépend de la chaleur de la respiration et de celle de l'inflammation. L'air respiré enlève l'humidité du pharynx, du larynx et de la trachée, et dessèche les mucosités adhérents à ces parties."*

The heat of respiration and of inflammation does not give rise to the exudation in the adult, where it must operate with as great a force as in the young. It may farther be remarked, that a false membrane, or shreds of the character of such substance, are occasionally evacuated from the bowels, where the stimulating effects of the inspired or expired air can clearly exercise no influence. The same, also, is thrown off from other mucous surfaces. There can be no doubt that the air, which is in constant contact with the

* *Cours de Pathologie*, vol. i., p. 392.

mucous surfaces of the air-passages, aggravates the existing inflammation, and by carrying off the watery particles of the fibro-albuminous exudation greatly facilitates the concretion of this. The reason why the false membrane is so copiously and readily formed, besides the causes which have already been stated, is to be found in the extraordinary *vital endowments of the air-tubes*. They are wonderfully rich in nerves and blood-vessels. As Broussais remarks, they have *des vaisseaux et des nerfs innombrables*. The vital activity of which any tissue or series of tissues is susceptible is in the ratio of these conditions. Hence the acuteness of the inflammation and the effects which have been described.

There are no organs of the body which are kept in so constant a state of excitement, but exceedingly variable in degree, as the air-passages. They are stimulated by all muscular exertions, by the whole class of mental emotions accompanied with articulate expression, by speech in all its forms; and when sleep shuts out the external world, the animal system being left to the quiet and uninterrupted operations of nature, respiration continues, and by the introduction of fresh air, the functions of the mucous membrane of the breathing tubes are still kept in lively activity fitting them for the heavier demands of awakened and busy human life.

I have now brought the consideration of croup to a close. It has not been studied in the hackneyed mode in which disease is usually treated. I have not walked in the well-beaten track which would have been easy to follow. I entered on the investigation of this affection, and shall pursue the inquiry concerning other affections occupying the same organs, believing that I had something new to communicate. Had not such feeling created an interest in the subject it would not have engaged my attention on this occasion. To repeat what others have said, and often in

less appropriate language, is a dull and profitless employment, profitless at least to the writer, except in a pecuniary sense, —a sense that exercises a greater influence on many than an anxious desire to enlarge the boundaries of science by discovering new truths.

The views which have here been developed concerning the nature of croup, are not to be regarded as theoretical speculations resting on no solid foundation whatever; or if in any degree sound possessing no practical application. Truth always, in one way or another, displays this. If it did not it would be worthless. It has invariably a value, and the extent of this is to be measured by its application in some of the varied departments of human knowledge. Any new light thrown on the functions of the animal system *must necessarily be practical in its influence*, if not immediately, subsequently when well understood, or indeed from the additional light which it is instrumental in bringing into broad day.

It is easy to show that these views are practical. They prove beyond dispute, that in the inflammatory affections of the air-passages in the young, the danger which is to be apprehended arises from the natural tendency of the circulating fluids to flow from the *external* parts of the body towards the centre of excited vital action, accompanied with the marked depression of the powers of life generally. It is, therefore, clear, that bleeding, leeches, calomel, and purgatives, all of which are often employed, will tend to aggravate this disposition of the blood to move in such direction, as well as to the whole of the internal organs. It is mainly owing to treatment of this kind, and other measures which weaken or depress the animal system, that croup is so fatal a disease.

Is it of no importance to show on what grounds such remedial means are prejudicial? Is it a matter of no

moment to have distinct and just notions concerning the action of medicinal agents? The principles which teach us to avoid what is fraught with mischief have a positive value: they will enable us to select and use what is beneficial. The serious mortality of children, one half of those born dying under five years of age, whatever be the nature of the affections from which they suffer, is to be ascribed, in a far higher degree than will perhaps be admitted, to a tendency of the circulating fluids to quit the extremities and surface of the body and to accumulate internally. Each case of death will of course be attributed to some particular disease, when in fact this induced disturbance of the circulatory system, which is altogether overlooked or treated lightly, has on numerous occasions been the cause which rendered the disease fatal. On this matter I speak emphatically and decidedly. Extensive personal observation leaves no doubt on my mind as to the accuracy of the statement; and experience, in the employment of measures which prevent or correct this disordered distribution of the blood, strengthens it, and justifies the opinion expressed.

From the foregoing researches concerning the nature of croup, the difficulties with which the practitioner has to deal, in his efforts to arrest its course, need no further explanation. The false membrane which is formed does not originate in any *peculiar* inflammation of the larynx and trachea, but in the prevailing condition of the constitution of the young, one of the characteristic features of which is, a tendency of the fluids to retire from without, inwards, such an amount being conveyed to the diseased organs as to necessitate the fibro-albuminous secretion. It is, therefore, evident that one of the primary objects of treatment should be to maintain, as far as possible, these fluids in vigorous circulation in the extremities and on the surface of

the body. Friction will do much towards the attainment of this end.

I shall now briefly advert to the advantages of friction in this disease of the air-passages, as they have not hitherto been suggested by any writer, nor was it to be expected until the scientific grounds of such remedial application were fully understood.

The moment that the symptoms of croup set in, as fever, the accelerated pulse, and the shrill crowing kind of cough, or it may be hoarse, occurring usually in fits, the patient should at once be put to bed, if not already there, so that an equable temperature of the body may be maintained. Weak and foolish parents occasionally raise objections to this temporary restraint because the child does not like it. It is, however, a measure of unquestionable importance and should be imperatively insisted upon. To keep up, as far as possible, the natural heat and circulation on the surface of the body, diminishes the danger to be apprehended from the local inflammatory affection. The abdomen should be rubbed with olive oil, as previously recommended, every four or six hours according to the urgency of the case, and warm fomentations should in the interval be steadily used.

I will endeavour to explain briefly how these means operate, and powerfully, as remedial agents. In proportion as the contents of the abdomen,—the viscera and associated blood-vessels,—are excited, stimulated to greatly increased action, the blood is equalized in its distribution, and its motion is invigorated throughout the animal system. According as this effect is produced, the air-passages, *as centres of aroused morbid operations, are weakened*; the fluids that would otherwise have flowed to them, from the depression and derangement of the functions of life, are in part, at least, possessed by and retained in other organs, enabling

the former to perform their offices with greater regularity and efficiency.

When it is considered that the danger of croup consists in the presence of the false membrane which is rapidly and abundantly thrown out, it will not be denied that whatever measures tend to relieve the larynx and trachea of superabundant fluids, *will in the same degree necessarily ameliorate the symptoms of the disease.* Nor will it be doubted by those who are capable of appreciating the influence of friction to the abdomen, that one of its inevitable effects is to excite the circulation in the whole of the viscera, and when they have received more than their due share of blood, to re-distribute it, strengthening the current transmitted to the extremities and surface of the body.

The subject presents itself under another point of view. The mucous membrane of the air-passages, previous to being oppressed by superfluous fluids, is in a morbid condition,—the seat of inflammation in an early or advanced stage. Friction employed in the way stated, from the remarkable sympathy existing between the mucous membrane of the diseased organs, and that of the alimentary canal, rouses the former to healthier action, and thereby corrects or lessens its disposition to pour out the fibro-albuminous substance. Should this be present, there are no means that will be as efficient as friction in disconnecting it from the mucous membrane on which it is super-imposed. It effects this by imparting to the latter more natural physiological conditions.*

Friction to the spine is likewise a valuable adjuvant. It excites and invigorates the functions of the nerves of the

* If the symptoms were exceedingly urgent, and especially from the depression of the powers of life, I should employ friction to the whole surface of the body, in order to excite and keep up a vigorous circulation in it taking care that the child continued covered.

whole of the respiratory organs; consequently, conjoined with that to the abdomen, active remedial measures are put in operation, the influence of which, in combination with other appropriate treatment, will, in numerous instances, succeed in arresting the progress of a disease which is indeed too often fatal, and too often from injudicious practice.

The intimate connection between the spine and the organs of respiration, is strikingly illustrated by a mode of treatment which has been adopted, and successfully, in severe cases of croup, as the following extract will show:—

“Dr Harden of St. Petersburg has of late, after every other remedy had failed, ventured upon cold affusion. He first tried it, in a fit of despair, upon a child of his own, eighteen months old. The child was placed in a bathing-tub, with its belly upon a cushion of hay; and a pail of water of 12° Reaumur, was then poured quickly from the head along the spine. The symptoms after the first affusion, soon diminished; the operation was repeated at intervals, ten times, and the child recovered. He has since employed it with like success *in the first stage of the disease*; and Dr Miller, another physician of St. Petersburg, is said to have been, still more lately, as fortunate as himself.”

It may here be observed, that this treatment is admissible only during the first symptoms of croup; later it could not fail to be injurious by its serious depressing effects upon the constitution. Applied in the early stage of inflammation, it subdues the excited and morbid action set up in the nerves of the larynx and trachea; and the repetition of the affusion strengthens these nerves, so that at length they recover their natural tone and energy of function.

The interest I have felt in this inquiry must be my apology for the somewhat extended remarks to which it has led. Their practical application is not confined to croup. To regard them in this light is to take a very limited view of the

the former to perform their offices with ~~re-~~ stopped. On and efficiency. ~~been to show,~~

When it is considered that the ~~d-~~ the child as com- in the presence of the false mem~~b-~~ treating of the for- abundantly thrown out, it will ~~r-~~ mode in which the de- measures tend to relieve the ~~the~~ course and character of abundant fluids, *will in* the young, and I trust that my *liorate the symptoms of* successful.

by those who are ~~or~~ to proceed to the investigation of friction to the ab~~o-~~ the air-passages, as acute and chronic to excite the ~~the~~ acute form of the disease, when un- when they ha~~ve~~ there is little to be advanced in addition to the to re-dist~~r-~~ the mucous membrane of these organs the ext~~r-~~

Th~~at~~ *as the condition of inflammation, or in respect of means appli-* Th~~at~~ *when the seat of inflammation, or in respect of means appli-* *able to the treatment of it. Nevertheless, the investiga-* *tion of the affection, but especially the chronic form of it,* *will not be altogether void of interest in a practical point of view.*

The symptoms of acute bronchitis are variable in their manifestations in different individuals, being modified by age, habits, and the character of the constitution. In many cases the affection is comparatively slight, and yields to rest and judicious domestic treatment: in others it is exceedingly severe and demands prompt and active measures. Some persons are peculiarly prone to inflammation of the mucous membrane of the air-tubes; and when it occurs, under such circumstances, at an unfavourable season of the year it is often tedious if not difficult to cure.

The disease is usually preceded by a sense of chilliness, slight fever, and coryza, a frequent watery defluxion from the nostrils; and after a day or two it is followed by irritation of the throat, and a more or less troublesome cough, which at first is dry, but afterwards a clear, transparent, and

pus is expectorated, the fever at the same time much more marked. The more severe the inflammation the greater is the viscosity and tenacity of the sputum. Occasionally this has much the appearance of the sputum in cases of acute pneumonia. As the disease progresses, the fits of coughing become frequent and violent, and the patient experiences heat and oppression in the interior of the chest, and the features have an anxious expression.

In this stage of the affection the inflammation has attained its highest point, the pulse is quick, somewhat strong, though rarely full; the countenance is flushed, and the surface of the body is hot and dry, the fever often terminating in the morning by a slight moisture on the skin. The urine is usually small in quantity, and is cloudy or deposits a copious sediment. The glairy and glutinous nature of the *sputum* indicates the intensity of the inflammation, which, however, is little, and only temporarily relieved by the excretion. This is evidence of the struggling and ineffectual efforts of the affected mucous membrane to arrest the disease. The further advance of this is followed by the expectoration of yellow, white, or greenish masses mixed with viscid mucus; but ultimately the sputa present a uniform purulent aspect, and in some cases, when the constitution is plethoric or of weak fibre, the amount expectorated is extraordinary.

The symptoms generally now decline. Instead of the burning skin, the flushed and anxious countenance, the constantly recurring fits of coughing, distressing and exhausting the patient, the fever is succeeded by a moist or clammy state of the skin; the breathing, though still short and oppressed, and accompanied with uneasy sensations in the chest, is much freer than in the previous stage. Slight efforts of coughing are followed by thick, heavy sputa, the

physiological principles which have been developed. One prominent object in this investigation has been to show, what are the constitutional conditions of the child as compared with those of the adult; and in treating of the former, to point out distinctly the mode in which the derangement of them influences the course and character of all the diseases which attack the young, and I trust that my efforts have not been unsuccessful.

It is now necessary to proceed to the investigation of other affections of the air-passages, as acute and chronic Bronchitis. On the acute form of the disease, when uncomplicated, there is little to be advanced in addition to the lengthened observations which were made on croup, either as to the condition of the mucous membrane of these organs when the seat of inflammation, or in respect of means applicable to the treatment of it. Nevertheless, the investigation of the affection, but especially the chronic form of it, will not be altogether void of interest in a practical point of view.

The symptoms of acute bronchitis are variable in their manifestations in different individuals, being modified by age, habits, and the character of the constitution. In many cases the affection is comparatively slight, and yields to rest and judicious domestic treatment: in others it is exceedingly severe and demands prompt and active measures. Some persons are peculiarly prone to inflammation of the mucous membrane of the air-tubes; and when it occurs, under such circumstances, at an unfavourable season of the year it is often tedious if not difficult to cure.

The disease is usually preceded by a sense of chilliness, slight fever, and coryza, a frequent watery defluxion from the nostrils; and after a day or two it is followed by irritation of the throat, and a more or less troublesome cough, which at first is dry, but afterwards a clear, transparent, and

glairy mucus is expectorated, the fever at the same time becoming much more marked. The more severe the inflammation, the greater is the viscosity and tenacity of the secretion, and occasionally this has much the appearance of what is observed in cases of acute pneumonia. As the malady progresses, the fits of coughing become frequent and violent, and the patient experiences heat and oppression in the interior of the chest, and the features have an anxious expression.

In this stage of the affection the inflammation has attained its highest point, the pulse is quick, somewhat strong, though rarely full; the countenance is flushed, and the surface of the body is hot and dry, the fever often terminating in the morning by a slight moisture on the skin. The urine is usually small in quantity, and is cloudy or deposits a copious sediment. The glairy and glutinous nature of the *sputum* indicates the intensity of the inflammation, which, however, is little, and only temporarily relieved by the excretion. This is evidence of the struggling and ineffectual efforts of the affected mucous membrane to arrest the disease. The further advance of this is followed by the expectoration of yellow, white, or greenish masses mixed with viscid mucus; but ultimately the sputa present a uniform purulent aspect, and in some cases, when the constitution is plethoric or of weak fibre, the amount expectorated is extraordinary.

The symptoms generally now decline. Instead of the burning skin, the flushed and anxious countenance, the constantly recurring fits of coughing, distressing and exhausting the patient, the fever is succeeded by a moist or clammy state of the skin; the breathing, though still short and oppressed, and accompanied with uneasy sensations in the chest, is much freer than in the previous stage. Slight efforts of coughing are followed by thick, heavy sputa, the

pulse is less frequent and softer, the urine is more abundant, and the bowels more readily act. In all inflammatory affections, constipation is a natural result of the seriously altered and disordered condition of the vital powers at large; and the instances are indeed few in which any advantage is derived from the use of aperients. As previously explained, the induced repose of any one important part of the animal system is the consequence of the over-excited action of another. The balance of the energies of life is disturbed, and the re-establishment of a normal state of things, will, with very rare exceptions, be the most promptly and safely accomplished by leaving the bowels at rest.

The anatomical conditions of the mucous membrane of the air-passages in those who die of acute bronchitis, display in an unequivocal form the effects of inflammation. The trachea or wind-pipe, and the first divisions of the bronchi, are found red to a greater or less extent. Some portions of the membrane of these organs seem to be finely injected, and in fact their capillaries or minute vessels are distended with blood; and hence the florid appearance of the tissue: in other portions, small red points are merely observed. In severe cases the lungs become implicated in the existing mischief suffering more or less from inflammation or congestion.

It is remarked by Lænnec, "that the extent and intensity of the redness are not always proportioned to the violence of the inflammation, the quantity of the expectoration, or the acuteness of the case. Thus, in the catarrh, whether latent or not, which complicates fevers, we find the membrane swollen and of a *livid* red over almost its whole extent, and also softened here and there; while in the idiopathic disease, even when very acute, it exhibits marks of inflammation in certain points only."

While the observations of this distinguished pathologist

are, with certain reservations, perfectly correct, he was not, however, in any degree, acquainted, with the causes of the differences he points out, nor have other writers given a satisfactory explanation of them. As has been previously stated, Laennec was perhaps unrivalled in the branch of science which he cultivated, viz., morbid anatomy, but he was a very indifferent physiologist as his writings amply testify. Had he been as familiar with living animated matter, the laws according to which it acts, as with the diversified changes displayed by dead animal structures, he could not have failed to have enunciated practical views of immense importance to the healing art. It would however, be difficult to find in his works a suggestion, much less a broad principle, that has tended to improve the treatment of disease. In this respect he was greatly surpassed by many of his contemporaries.

He speaks of the general redness of the mucous membrane of the air-passages in cases in which catarrh complicates fevers, that is catarrh superinduced upon fevers of a *continued* kind; or if from the first a symptom characterising them, is not a leading feature in the disordered functions of the body. The dominant symptom, and that which awakens no little anxiety to overcome, *is the tendency to, or the general depression of the powers of life*, which invariably marks the progress of such affections, and when they terminate fatally it is from this depression and the structural modifications springing out of it.

The extreme and general redness of the mucous membrane in continued fevers complicated by catarrh, is to be traced almost entirely to the induced weakness of the animal system, in consequence of which the circulating fluids, being no longer retained, as in health, in the extremities and on the cutaneous surface, are thrown upon the internal organs, and among these on the mucous membrane in question. And it is the congestion which results, giving rise to

or associated with slight inflammation, that accounts for the *general and extreme redness of the tissue*.

It is scarcely possible, under such circumstances, that the inflammation, whether existing *ab initio*, or excited by the presence of accumulated blood, can exhibit such a degree of intensity as to receive justly the appellation of *acute*. There is not a sufficiency of vital tone in the affected membrane to be susceptible of that amount of *re-action* on which the *acuteness* of inflammation altogether depends. The intensity of it is an accurate measure of the vital energies of the tissue disturbed, and aroused to extraordinary efforts to regain its natural state. The soundness of these remarks is borne out by what Lænnec further says: he observes that the membrane is "*also softened here and there*." This condition is due to its long-continued congestion and defective nutrition. It does not occur in the acute stage of acute inflammation. Vital action in excess will not directly produce it. It may take place as the effect of it in a subsequent sub-acute or chronic stage of the disease. The softening of the mucous tissue necessarily implies *imperfect nutrition,—diminished vital processes*.

The softened and swollen membrane is further described by Lænnec as of a *livid* red. This appearance would be calculated upon from the nature of the derangement,—*venous congestion and the deteriorated properties of the blood*, not simply locally but throughout the animal system; and even this species of redness is mainly to be ascribed to the influence of the inspired air upon the mucous surface. In other parts of the body, where this cause does not operate, the blood, where it was accumulated, would be of a darker hue. The redness which marks the presence of acute inflammation, is of a richer or more *scarlet* colour, unmistakable evidence of the severity of the disordered vital action existing. Lænnec states that this redness is "not always

proportioned to the violence of the inflammation." If all conditions be equal, this however must necessarily be the case. By these conditions are to be understood, age, character of constitution, and habits. To argue otherwise, would be equivalent to contending that inflammation does not produce redness. It does this in all tissues capable of displaying it. The appearance of an inflamed membrane varies with the stage of the disease of which it is the seat. In the early and last stage of acute bronchitis, when the expectoration has become copious and puriform, there is little redness of the mucous membrane. The excretion is at the expense of the blood which it possesses, and the conversion of this into morbid matter removes the previous congested state of the capillaries, and the redness with which it was accompanied. It is further remarked by Lænnec in his description of acute bronchitis, that the urine frequently presents a copious mucous cloud or deposit; and from this circumstance, and the heat experienced in passing the water, he regards the mucous membrane of the bladder as indicating, though only in a slight degree, an *inflammatory affection* of the same kind as that of the breathing organs. This in my opinion is a conclusion not warranted by facts; nor is it difficult to assign a satisfactory reason for this constantly attendant derangement of the kidneys and bladder.

In all cases of acute inflammation, whatever be the viscus attacked, as well as in all fevers of an inflammatory character, the urine is necessarily modified in its properties, and almost invariably diminished considerably in amount, and the heat which is occasionally experienced in passing it is attributable to these changes. Several causes concur in the production of them. One of the most efficient is *the disordered action of the skin*, which has been overlooked, or imperfectly apprehended, by writers. This large outlet or emunctory no longer exercises its ordinary functions.

Much of the refuse or waste matters which it throws off in health, is retained. The cutaneous surface, hot and dry, is not in a condition to discharge them. Hence the diseased state of the blood, and its unfitness to minister to the various secretions of the body. One proof of this is the disturbed action of the kidneys. The quantity and character of the urine excreted are unerring indications of the fact. The mucous membrane of the bladder and of the urethra, unaccustomed to a vitiated fluid of this kind, will be irritated by it, and to this is to be ascribed the mucous cloud in the water which is passed, *but not its lessened flow or deposit*. These effects are to be traced to other causes,—as the disordered functions of the nerves of the kidneys, and the altered constitution of the blood.

Independently of the diminished and irregular action of the skin contributing to the results pointed out, it is evident that the matters which fail to escape through their natural external issues, will co-operate with other obvious agencies in aggravating the disturbance of the functions of the animal system. Neither the stomach, liver, nor intestines, during an attack of acute inflammation, have those nervous conditions necessary to healthy secretions; and, indeed, if they possessed them, the blood which they receive is wanting in those qualities essential to the elimination of their respective fluids.

The subject which is here discussed is of practical importance. The physiological and pathological principles unfolded, show that diseases of any violence are never, properly speaking, *local*, that is, limited to the particular organs which manifest the predominant symptoms, but, on the contrary, implicate the entire of the animal system. The primary causes of derangement and their effects re-act on each other, and, in numerous instances, the latter, from their general and less definite form, are very rarely justly

seized or appreciated, and yet it is on the judicious treatment of them that recovery on many occasions depends. It is only a few minds, intelligent and acutely observant, that perceive clearly, and grasp fully, the multiplied constitutional morbid phenomena, originating directly and indirectly in severe inflammatory affections. Lænnec, with all his opportunities of studying the living and dead body, had very confined views of the former when suffering from disease. He saw this and described it well, but he saw little beyond the region which it prominently occupied. The same may be said of distinguished pathologists generally. Their researches have aided in a very questionable degree the improvement of the healing art. This, however, is not a defect inherent in pathological investigations, but is to be ascribed to the narrow and unphilosophical method in which they have been pursued. To be of any practical value the light of physiology must be thrown upon them. Normal vital action, and the laws which govern it, must be thoroughly understood in every attempt to trace its deviations as expressed in disease, if the study of this is to be fruitful in the suggestion of remedies adequate to the exigencies which arise.

To know that which is a *departure* from a natural state of things, the physician must know that with which it is compared and measured mentally whenever it falls under notice. Pathology gives only one kind of information, facts obvious and striking to the senses, but before they can become instructive, can serve any practical end, they must be vivified by another species of knowledge. They are dead and unmeaning until this is imparted to them, and had they not been dead, is it possible to imagine that after long years employed in the scientific accumulation of them, the treatment of disease would still offer a fine field for ingenious and vague guess-work,—would be still destitute of broad and well-defined principles?

I have been led to make these remarks, less from a desire to expose the fallacies or shortcomings of others, than from an anxious wish to place before the mind what appear to me larger and more correct notions concerning numerous affections, whether inflammatory or otherwise, believing that to treat them efficiently we must know them individually as a *whole*, which implies a knowledge of the nature of the constitutional effects to which they severally give rise, and this further pre-supposes a knowledge of the mode in which these effects are produced.

If the views which have been briefly propounded have truth for their basis, they will *breed*, to use the emphatic expression of a poet in reference to his own thoughts. They are here in a somewhat elementary form, and are associated with others as yet only dimly seen; but time and the genius of others will breathe vigorous life into them, displaying their susceptibility of expansion and of practical application.

I am fully sensible that I am writing only for the few: the many will feel no interest in matters discussed after this manner. They want a short road towards the cure of disease, and indeed I know of none when difficulties arise which embarrass and distress the physician,—when well-known and tried remedies fail. It is then that new roads have to be sought, and roads lying out of the beaten track. To discover these the mind must be familiar with the constitution of the animal economy, with the physiological relations uniting organ to organ, and with the principles which regulate their action. Further, it must be able to seize the diversified morbid results consequent on the disturbance of these relations, and capable of tracing them to their respective causes. Such knowledge, as far as space and the nature of the subject will admit, it is my object to convey. That which is the stimulus to my efforts on this occasion, is not in any degree a pecuniary consideration, but an earnest

desire to impart information, and such as, according to my judgment, is the best calculated to awaken thought and inquiry, and in a direction in which much may be achieved, though little has been accomplished.

In the foregoing observations on acute bronchitis it was stated, that in its third and last stage, when it terminates favourably, the expectoration generally becomes thick, copious, and puriform, which is termed the *resolution* of the affection. Under ordinary circumstances recovery is speedy and satisfactory; but in some constitutions this is not the case, the same kind of sputum, diminished in quantity, continues, and the disease assumes a chronic form of which I shall afterwards speak.

Acute bronchitis has its three distinct stages. The *first* is characterized by the irritation of the throat and the dry cough; the *second*, is marked by a transparent and glairy expectoration, extremely stringy or tenacious when the inflammation is at its height: the *third*, is distinguished by the sputa becoming puriform.

It is important that energetic means should be employed to arrest the disease in its first and second stage. In the first, the mucous membrane of the throat is congested and inflamed though only to a slight extent. In the second, the inflammation exists in all its violence. It has already been stated, that the nervous and circulatory conditions of the mucous tissue of the respiratory organs may be powerfully influenced by means applied to other regions of the body, as friction and fomentations. In the inflammatory stages, when from the urgency of the symptoms or the character of the constitution, danger is to be apprehended, it is then necessary that all the remedial resources which skill can suggest should be brought into play. Independently of homœopathic agents, which in such cases are exceedingly valuable, I order a worsted stocking to be steeped in hot

water, and after being wrung out to be wrapped round the throat placing over it a piece of Mackintosh or oiled silk, and renewing the immersion of the stocking as often as is necessary to keep up the required degree of heat. At the same time I advise friction to the abdomen to be carried out as previously recommended. The frequency of its repetition must be regulated by the urgency of the symptoms.

It may possibly be imagined by those who have no just idea of the mode in which these adjuvants act, that the good which they are capable of effecting is of trifling moment. This would certainly be an erroneous conclusion: according to my experience, which is that of years and on a somewhat large scale, the beneficial results arising from their steady and determined employment have on many occasions been remarkable. Indeed such is my confidence in them, that how severe soever may be the inflammation, failure of success rarely enters into my calculation. This confidence is inspired by a knowledge of the mode in which such means affect the animal system, and the repeated observation of their extraordinary curative effects. There is not a nerve or blood-vessel distributed to the mucous membrane of the throat and its contiguous structures, that is not greatly influenced by these active external measures. The friction applied to the abdomen stimulates and invigorates the functions of the contained viscera, causing these to make increased demands for nervous power upon the nervous centres, and so modifying the condition of the circulatory system, as to transmit to the viscera a healthier current of blood. These are physiological consequences self-evident to the mind capable of understanding such matters, and indeed it would be an absurdity to question them. The changes induced in the abdominal viscera diminish the nervous power transmitted to the inflamed respiratory organs; or in other words, lessen the morbid excitement of the nerves

in which they are exceedingly rich. The latter phenomenon necessarily follows from the former; and hence the inflammation *which is alone attributable to their undue action*, becomes milder and gradually declines. The blood which this state of the nerves has brought to the inflamed membrane, beyond what is natural to it, is withdrawn and flows in other directions.

Such are the physiological results arising from friction to the abdomen. They are not the creation of a visionary, but truths the elaboration and establishment of which have been the occupation of many years:—an occupation, which from the interest with which it was fraught, rendered the labour light and grateful.

The preceding remarks, in reference to treatment, apply not only to the inflammatory stages of acute bronchitis, but to the last stage when the expectoration becomes puriform. When the constitution is weak or scrofulous in its nature, or when the habits of the individual have been intemperate, the disease, in this stage, does not yield readily and is apt to pass into a chronic form, which if not actively and properly treated, entails upon the patient through life more or less of cough and expectoration.

At this time the mucous membrane of the air-passages cannot justly be considered as suffering from inflammation. The vital action which constitutes this no longer exists as is evident from various indications. Ordinarily there is little or no fever; the pulse is seldom frequent, or if accelerated, feeble; there is no heat of skin; the countenance, however, has occasionally a species of hectic flush. The mucous tissue is not red or injected, but is mostly pale, and is described as sometimes much paler than natural. What then is that condition of it which keeps up cough and expectoration? *It is a weakened and disordered action of the capillaries or secretory vessels of the mucous membrane,*

co-existing with a certain amount of irritation, but irritation low in degree, as compared with the weak and relaxed state of the parts the seat of disease. The blood brought to them is converted into a puriform matter, and at times from its copiousness, and the ease or facility with which it is poured out, it seems rather to ooze from its vessels than to result from any active secretion.

It has been remarked by Andral, and other pathologists, that the "inflammatory softening of the bronchial mucous membrane is much more rare than that of the gastro-intestinal mucous membrane." The cause of this difference has not been pointed out, yet it is not difficult of explanation. The susceptibility to this structural change will vary with the vital endowments of the mucous tissue, and the influences to which it is naturally and abnormally subjected. The vital and physical conditions of the mucous membrane of the two regions have comparatively little in common: that of the bronchi does not exercise the office of secretion beyond what is required to maintain it in health; nor does it exercise that of absorption. The air-tubes which it lines are simply for the transmission of gases in two different directions. These tubes from their organization do not allow of the *accumulation* of blood, except in an exceedingly limited degree; nor is the circulation in them disturbed to any extraordinary extent by the occurrence of this in contiguous organs, as for example the lungs. The bronchial mucous tissue being constantly in contact with air, and necessarily stimulated by it, the blood cannot in any quantity remain stagnant or at rest in its vessels, a pathological state essential to its softening, and equally so of all other structures of the body. This *softening* may, and frequently does, arise, independently of any functional disturbance to which the term inflammation could be justly applied, though all such effects have been ascribed to it by

Broussais and others. They have, however, in my opinion, erred in not clearly understanding the conditions on which the softening of a tissue depends. *Its impoverishment or insufficient nutrition is the occasion of it*, and while this is often the consequence of inflammation, it may, and does, occur when this in no degree has existed; in fact when it may unquestionably be traced to the want of vital energy adequate to the production of inflammation, as is observed in certain affections of the brain and spinal cord.

The mucous membrane of the stomach and intestines is very differently circumstanced from that of the air-passages. In the one organ it is actively employed in the secretion of gastric juice, and in the others, in the absorption of chyle, and also in the elimination of useless matters. These processes, especially in the stomach, necessitate periodically the presence of a considerable amount of blood; or in other words, they imply great vascularity in the mucous membrane of these regions.

It may further be remarked, that the stomach and intestines have peculiar structural relations to the liver, spleen, and the great veins of the abdomen,—relations which account for the derangement of both when the vital powers generally are depressed. On these occasions the latter organs always become *congested*,—receive more blood than they can profitably use,—and that which is in excess in them never fails to give rise to a corresponding pathological condition in the mucous membrane of the stomach and intestines. Hence the frequency of its softening and ulceration in diseases which are regarded as having their seat in other organs, as the lungs, the liver, the brain, or spinal cord. Had these facts been distinctly apprehended by those who have laid down principles for the employment of remedies, very different measures would have been suggested for the accomplishment of the object in view.

The mind would have taken a wider survey of the animal system, and would have seen much further into the causes and effects which characterize the serious disturbance of it.

Chronic bronchitis, in whatever way it originates, offers considerable interest to the practitioner from the difficulty which is experienced in the cure of it. In the young it sometimes supervenes on eruptive diseases, or is consequent on acute inflammation; it may also arise from repeated colds, and is often produced by the inhalation of irritating substances. It is an affection which is frequently observed in advanced life.

The symptoms in all these cases are somewhat uniform, differing only in degree, as modified by age, the duration of the disease, and the nature of the constitution. In some persons, though the cough is occasionally troublesome, and the expectoration copious, the appetite, and the digestive functions are unimpaired; nor is the vigour of the body perceptibly diminished during a long course of years. In cold and damp weather the cough is aggravated and the sputum is increased, and likewise by active muscular exertion; and when this is by no means violent, the breathing becomes short and embarrassed, not apparently from any co-existing disorder of the lungs, but from a thickening of the mucous membrane of the bronchi by which their capacity for the admission of air is lessened. A case such as is here described is not very uncommon. The individuals who have fallen under my notice presenting these symptoms,—that is a well-marked bronchial affection, and a constitution otherwise sound and strong,—have mostly had the disease from infancy, left probably by hooping-cough, measles, or scarlatina. In early years there would be little to indicate it beyond an occasional cough, slight expectoration, and shortness of breath readily excited by exercise.

When the animal system is naturally delicate, it is gra-

dually and occasionally rapidly undermined by the prevailing cough and expectoration; the former being frequent and distressing, and the latter sometimes remarkably abundant. I have seen cases in which it amounted to one or two pounds in the twenty-four hours; but this is rare, and occurs only towards the fatal termination of the malady. The sputa are variable in appearance and properties. In some cases they are of a dirty greyish or greenish hue, more or less mixed with frothy mucus; in others, they are yellowish, heavy masses, such as are usually seen in phthisis. As a rule, they are inodorous, but at times they have a strong foetid smell.

It is in some instances a matter of extreme difficulty to distinguish chronic bronchitis from true pulmonary consumption,—the tubercular disorganization of the lungs. The cough, expectoration, and the aggregate of other symptoms are so alike in the two affections, that the pathologist is at a loss to draw a precise line between them. Even with the modern aids for accurate investigation,—as percussion and auscultation of the chest,—the difficulty is still occasionally experienced. There is a difference in one respect, though alone it is scarcely sufficient as a guide. In phthisis, we have alternate heat of skin and perspiration: in uncomplicated chronic bronchitis, these phenomena seldom occur with the same regularity. The two diseases may, however, be associated, and then this distinction no longer exists.

There is no doubt that bronchial affections, simulating in various degrees pulmonary consumption, have often been mistaken for the latter, not only by the friends of the patient, but by the practitioner himself. The cough, expectoration, and the wasting of the body have somewhat naturally led to an incorrect diagnosis. It is, however, of great importance in a practical point of view, whether the principles of treat-

ment followed be allopathic or homœopathic, to discriminate between the two, and it is only in a few instances, if a proper examination be made, in which this is not possible. The remedies which would be applicable to the one would be of little avail to the other.

The structural changes to which chronic bronchitis gives rise, if persistent for years, which is not unusual, is a lessening of the capacity of some of the air-tubes, arising from a thickening of the mucous membrane, and at times of its subjacent tissues: the same tubes are likewise liable to dilatation caused by the paroxysms of coughing. According as one or several of them are affected in this manner is the difference in the signs furnished by auscultation. The mucous membrane is also greatly altered in its physiological conditions,—to what extent it is not easy to determine. The more or less copious secretion from it is evidence that the parts, the seat of disease, are *centres* to which the blood is drawn in the measure of the expectoration, and to produce this the nerves must be in a state very different from that of health.

It is remarkable how long persons occasionally suffer from the disease under consideration, without being incapacitated from pursuing their ordinary occupations, or indeed exhibiting any marked decline of their physical powers. When such is the case, though the constitution to appearance is anything but robust, it has an innate vigour or *wiriness* which the professional eye readily detects; and further, the habits and other circumstances are favourable to health.

Chronic bronchitis of long duration, though seldom admitting of cure,—certainly not in the aged,—may nevertheless be ameliorated, or so influenced as not to interfere materially with the allotted span of human existence. The mucous membrane of the air-passages, as previously stated,

has extraordinary sympathetic relations to the whole of the digestive organs,—relations which show the importance of maintaining the functions of the latter in a correct state, and of directing attention to them in the treatment of the bronchial affection, and, indeed, in laying down rules as a guide to the individual himself in respect of diet and other matters. Every derangement of the stomach, liver, or intestines, arising from food either too abundant or difficult of digestion, or from too free indulgence in stimulants, invariably aggravates the cough, and greatly increases the expectoration. Spirits not unfrequently allay the cough and arrest the expectoration for several hours, but when their stimulating effect has ceased or has nearly passed away, the cough then becomes troublesome and the expectoration copious, and this, after several fits of coughing, is more purulent in character than under ordinary circumstances.

Many years ago a case of chronic bronchitis in a gentleman seventy years of age, and occupying a distinguished position in his county, came under my care, which was at the time interesting to study, and valuable for the practical instruction which it taught. It is on the latter account that it is here introduced. The patient was short in stature, and in health extremely slight. He had through life been temperate and regular in his habits. The disease had been produced by taking a tepid bath the temperature of which was too low for the then state of the body.

A physician of considerable reputation had long been in attendance upon him, and so hopeless did he regard the case, that he postponed for awhile his leaving home on a continental tour, calculating on a speedy and fatal termination. This, however, did not occur, as was anticipated, and the physician at last took his departure.

On visiting the patient, I learnt that he had been confined to the house for some time, being quite incapable of

taking carriage exercise. He was greatly emaciated, and from weakness, and a frequent cough, the body was so bent forward, that, in a sitting position, the chin rested upon the chest. The expectoration was easy and puriform, and, considering the limited vital resources existing, was large in amount in the twenty-four hours. There was little or no appetite, nor were the digestive organs capable of dealing with much food. The pulse was feeble and accelerated.

The disease had been regarded as a clear case of consumption,—a decay or thorough breaking up of the lungs. A careful examination of the chest convinced me, however, that it was a *bronchial* and not a pulmonary affection. Therefore, instead of endeavouring simply to relieve the cough by the ordinary class of expectorants, my efforts were directed to strengthen the animal system, to arouse and invigorate the digestive organs, being persuaded that, *as these objects were accomplished, a healthier condition would be created in the mucous membrane of the air-passages.* The efforts were crowned with singular success. The appetite was improved, and proportionately the powers of digestion. The patient gradually gained strength, and the cough and expectoration were steadily diminished. In little more than two months, the patient was able to take daily exercise, and a short time afterwards was sufficiently recovered to undertake a long journey to the sea-side. He lived three years in the enjoyment of moderate health, considering his age, the weakness of the constitution, and the chronic bronchial affection from which he still suffered.

The extraordinary, and unexpected, substantial relief, which the means employed had conferred in this case, made a strong impression on my mind. It led me to reflect deeply on the physiological relations uniting and blending into one grand whole the different organs of the body,—on the way

in which one may be so acted upon as to influence another or others in the multiplied manifestations of disease.

The present work has been the slow growth of trains of thought constantly suggested by cases analogous to the one which is here brought under notice. Practical and comprehensive physiological principles are not developed at once. They grow in their earlier stages by imperceptible degrees. Figuratively speaking, at first a small twig is seized, then a larger one, and afterwards branches in succession, until at length the mind traces these back to the trunk from which they spring: or in simpler and more intelligible terms, the isolated facts which the thoughtful study of disease discovers, are ultimately classified, presented to the understanding in such order and form, that the contemplation of them brings to light the principles on which they are explicable.

In the treatment of chronic bronchitis there are two great objects to be kept in view: the *first* is to keep up the strength of the body; and the *second* is to allay the cough and diminish the expectoration. The first is to be accomplished in two very different ways. The one being the selection of proper articles of diet; and the other being the employment of means which stimulate and invigorate the digestive organs, enabling them to make the most of the food which they receive.

Adults, in whom the disease is of long standing, should confine themselves to light animal food, as mutton, poultry, and game, avoiding broths, soups, and made-up dishes, as these are always difficult of digestion, and seldom fail to derange more or less the stomach. Vegetables should be sparingly used. Tea or coffee may be taken according to the taste of the individual and his experience of their effects. Milk alone, or in its several combinations, seldom agrees with adults. It is generally imagined to be easy of digestion. It is in the young, but rarely at a later period of life

when the stomach has had to accommodate itself to the usages of society,—a variety of stimulating ingesta. It not unfrequently increases the cough and expectoration. The dishes indulged in, whatever be their nature, should be few. In one word, the articles of food selected should be in such form, of such kind, and in such quantity, as will afford the required nutrition at the least possible expense to the vital energies of the digestive organs.

Stimulants *in moderation* are sometimes of great service, particularly in the scrofulous or lymphatic constitution, in which there is a deficiency of vital tone, the powers of life flagging, doing their work lazily and indifferently from want of a something to rouse them to more vigorous action. Nature, under such circumstances, needs assistance, and, if judiciously given, is benefitted by it. Stimulants do not stand in the place of food;—nor are they in general to be regarded as nutritious, but they have their use. They are more than the oil which is applied to the wheel to facilitate its movements;—they are a force acting *a-tergo* urging the machine forward. When the temperament is *nervous* or *sanguineous* stimulants are mostly injurious. They excite, as in other cases, the vital functions, but the excitement partakes of the character of *irritation*. It is vital action in excess, and usually prejudicial in its effects. Occasionally, however, persons of such constitution may be allowed to take, and at times with advantage, the lighter French wines, or such as are least stimulating in their properties.

When the disease is consequent on acute inflammation of recent date, the regimen must be modified accordingly. As a rule it must be less liberal than the one laid down, and stricter injunctions in regard to other matters would have to be enforced.

The next consideration is, By what other means can the strength and wellbeing of the body be promoted? The

selection of food is only one branch of the inquiry bearing on this question, and certainly not the most important, though it has its value. The organs which have to convert it into nutriment,—to adapt it to the purposes of life,—should be kept prominently in view: in fact they should have the first place in the thoughts of the practitioner studying how he can most effectually cure or relieve the disease. This, however, is seldom the case. They are lost sight of in the attention which is given to the bronchial affection, or if suggested to the mind, they do not lead to the employment of measures calculated to improve their vital condition. The remedies which would be considered as applicable to this end are tonics, but they can rarely be used with propriety in the treatment of chronic bronchitis. Their tendency is to arrest the expectoration, which aggravates the cough from the increased irritation set up in the bronchial mucous membrane. The morbid secretion must not be interrupted in this manner. The only way in which it can be safely diminished, is by creating a healthier condition in the tissue from which it is discharged, and this is ordinarily a slow process, and will not be effected by agents which somewhat abruptly arrest the secretion.

Soothing or expectorant remedies may occasionally be beneficial in relieving the cough. The chief of them are opium, squill, ipecacuanha, and antimony, in which the allopath reposes great confidence. They have their utility, but this is generally limited to the exercise of a *palliative* influence, lessening the evil which exists, but not removing it,—not establishing in the diseased mucous membrane the conditions of health,—conditions which gradually lead to a satisfactory cure, or such an amount of improvement as is not very remote from it.

Remedies of this kind, in the doses in which they are given, seldom fail to disorder the digestive organs, at a

time, and under circumstances, when it is most important not only to secure them from disturbance, but to endeavour to impart to them additional vital powers, as that measure of success which should alone satisfy the mind in its remedial efforts, depends on the active co-operation of these organs.

Few writers have displayed juster views concerning the nature of chronic bronchitis, or the principles which should regulate its treatment, than Broussais. He was fully sensible of the difficulties which lie in the path of the practitioner in his attempts to cure it; and he candidly admits, that the *expectorants* and *sudorifics* which are generally had recourse to, so far from being useful, are injurious, and he states this as the result of his experience in the employment of them.

In the following extract this distinguished pathologist points out clearly and philosophically the object, which the physician should keep in mind in the treatment of the disease: "*Appeler les forces, et avec elles les fluides, vers les autres organes, et surtout vers la peau, offre encore une foule de difficultés. Trop souvent il arrive que le prétendu stimulant spécifique de la peau ou des reins stimule plus efficacement encore le poumon, et augment les progrès de l'induration.*"*

He acknowledges the difficulty of so acting upon the animal system, as to throw the blood from within, outwards, relieving the viscera by the increased action of the skin. The internal remedies which he prescribes will contribute little towards the attainment of it. His external applications are poultices, fomentations, and rubefacients. So strong indeed is his impression of the necessity of exciting the circulation *on the surface of the body*, that he recommends the following energetic means: "La propriété dont jouissent les bains secs, d'échauffer la peau sans introduire

* *Histoires des Phlegmasies ou inflammations chroniques.* Tome premier, p. 184.

des molécules aqueuses dans son tissu, leur mérite le premier rang parmi les médicamens qui peuvent redonner de l'énergie aux capillaires de la circonférence, débarrasser les viscères des fluides qui les surchargent, et combattre avec le plus d'avantage la diathèse séreuse et lymphatique."

In all chronic affections of any severity the viscera possess more blood than what is natural to them; and from this cause, and the weak or depressed state of the nervous system, their functions are always correspondingly feeble and disordered. Broussais had a distinct apprehension of these facts, and of the necessity of endeavouring to correct, in such cases, this disturbance of the circulation. His authority gives valuable support to the physiological and pathological doctrines which it has been my study to unfold, and to exhibit the practical application of them. They have shown in what way morbid action originates; they trace step by step its effects, as they variously manifest themselves in individual organs, and in the animal system at large; and they further prove that there are general remedial measures of extraordinary efficacy in the treatment of numerous diseases,—measures which have for their foundation unquestionable physiological principles.

Chronic bronchitis is often successfully treated by homœopathic agents, as *aconite*, *belladonna*, *mercurius*, *tartar emetic*, *spongia*, *arsenicum*, and *carbo vegetabilis*; but it must not be imagined that either these or any other internal remedies possess, as a rule, such marvellous virtues that the disease at once yields to their action. This indeed is not the case. The cure is generally tedious and difficult. How can it possibly be otherwise when we consider the nature of the affection,—a seriously disordered state of a mucous membrane, which, from its situation, is constantly excited by the inspired air, and is prejudicially influenced by every disturbance in the functions of the abdominal viscera?

Hence the long list of remedies which have been suggested and employed in the treatment of it.

There are no external means, in regard to efficiency, at all comparable to friction to the abdomen steadily carried out according to the recommendations laid down. In the course of a few days it very rarely fails to produce a beneficial change in the mucous tissue of the air-passages, as is evident from the less urgent or frequent cough and the diminished expectoration. Its further energetic use is followed by other and greater results. The appetite is improved, the digestive functions are invigorated, the excretions, as of the bowels and kidneys, become in all respects natural, showing that the viscera have acquired the conditions of health; and every step in the process of vital change has been marked by the amelioration of the bronchial affection. What other adjuncts are capable of giving rise to these local and constitutional effects in the same brief period, and with the same degree of safety?

The foregoing observations are intended to apply to chronic bronchitis in its uncomplicated state. It is, however, necessary to observe, that the frequent use of the term non-complication, in such cases, more generally expresses our ignorance, than any exact knowledge of the extent or nature of the affection studied. We suppose it to be restricted to certain tissues and certain portions of these tissues, and in its most prominent, or apparently exclusive manifestation, such may be the fact; when at the same time it may indeed implicate other structures in a way and degree that may give rise to no very obvious symptom,—failing to be obvious from our limited or imperfect means of investigation.

The force of these remarks is pertinent to the disorders of the whole of the respiratory organs, and in an especial manner to one of their tissues,—*the mucous membrane*.

This is variously affected by disease modifying its physiological and anatomical conditions; and hence the several varieties of chronic catarrh, as the *mucous*, the *pituitous*, and the *dry*; yet the differences which these offer, are simply to be traced to a difference in the degree of inflammation or irritation which has occasioned them, and may continue to exist, conjoined with the influence of constitution, age, and other circumstances. The distinctions which are established have their use, but they are often carried too far leading to refinements in practice either void of utility or injurious.

The general measures of treatment which have been discussed, are equally applicable to the whole class of tracheal and bronchial affections. These have no peculiarities which suggest any modification of them, being characterised by inflammation, either in its acute or sub-acute form, or by irritation; or structural and functional effects which these in common produce, as a thickening or vascular congestion of the mucous tissue.

Is it not evident, that in all these cases, there is one principal object which has to be kept in view, in the consideration of remedies to correct the existing evil, viz.—*to subdue the abnormal vascular and nervous condition of the mucous membrane*; or, in other words, to withdraw the blood from its congested vessels, and to diminish the undue action of its nerves,—or, it may be, to impart greater vigour to the latter?

It will scarcely be doubted—taking into account the nature of the vital relations connecting the internal and external regions of the body—the laws which regulate the distribution of blood and nervous power—that the practitioner, independently of medicinal substances, has large and active means at his command to effect great changes in the diseased mucous tissue. Every improvement in the func-

tions of the abdominal viscera has a direct influence upon it; and whatever excites and invigorates the cutaneous circulation exerts a similar power.

In dwelling on the adjuncts which contribute to the accomplishment of these results, the object has been to convey truths, which are either little understood, or only partially acted upon in the treatment of disease. The value of my observations, if allowed to possess any, consists in placing before the mind, in a way which has not hitherto been done, *the physiological principles governing vital action, and the mode in which the disturbance of this causes local and general derangement.* The prevailing defect in the practitioner, to whatever school he belongs, is in confining his attention almost entirely to the particular organ or organs the seat of disease; or looking but a short distance beyond them when he has to reflect, and often anxiously, in what manner he can exercise a beneficial influence upon them. My inquiries are intended to enlarge his views of the means of cure, so that the remedies which he habitually employs may be aided in their operation; and when difficulties of no common kind arise may be materially assisted.

The last subject, to which reference is made in the 14th section of this work,* *is ulcerated or malignant sore throat.*

Ulceration of the throat occurs under very different circumstances. It is sometimes observed in typhus and typhoid fevers of an unfavourable character, in gastric affections, and as a consequence of syphilis. It is, however, in malignant scarlet fever that it presents itself in its worst forms. In this disease it is foreshadowed, and usually in an early stage, by the severity of the constitutional disturbance. The pulse is small, feeble, accelerated, and irregular; the breathing is short and oppressive; ex-

* P. 288.

treme restlessness and fretfulness alternate with raving and stupor; the eyes are dull and suffused, the countenance has a heavy, unanimated expression, the mouth is dry, and the tongue is covered with a dark brown fur. The heat of the skin, from the ushering in of the symptoms, is never high, and it usually sinks below the natural standard. The eruption is late, partial, and variable in its appearance, and soon assumes a dark or livid colour; and sometimes, after being out a few hours, disappears, and after several days comes out again in the same imperfect manner.

The air passages, as the fauces, larynx and bronchia, are the seat of numerous ulcers, which not unfrequently display a gangrenous aspect; there is likewise an acrid discharge from the nostrils, and the throat is clogged with thick viscid mucus, giving rise to a rattling noise in breathing, and greatly increasing the pain and difficulty of swallowing; the glands of the neck are generally much swollen: and in the farther progress of the disease diarrhœa and hæmorrhages occur.

There are few maladies which fall under the notice of the physician, that awaken greater anxiety from the formidable nature of the symptoms, than malignant scarlet fever. When the child is of a full or plethoric habit, from injudicious living or a lymphatic constitution, the disease advances with wonderful rapidity, on the second or third day of the attack occasionally assuming a form in which ordinary medical treatment is of little if any avail. When the animal system is more favourably organized, possessing considerable tone and vigour, the symptoms from the first, and throughout the course of the disease, are milder, nevertheless they demand prompt and active means to subdue them.

The disease under consideration has been subdivided by writers into the *inflammatory*, the *congestive*, and *mixed*

varieties ; and at times it presents itself under aspects to which such terms may appear applicable, but scarcely with strict accuracy. It is never purely *inflammatory*, but with rare exceptions of *mixed* character, *congestion* constituting three-fourths of the combination, if not a greater proportion,—the remainder being *inflammation*. The excessive redness of the mucous membrane of the mouth, throat, and of the alimentary canal, the accumulation of blood in the liver, spleen, and other viscera, and the swollen parotid and sub-maxillary glands,—morbid conditions which are always present,—are evidence of the disturbed state of the circulatory system.

The symptoms from the first show that the inflammation is never *acute* in the type of fever under consideration. Were such its nature, the pulse, the temperature of the body, and other phenomena, would indicate the fact ; and, indeed, were such the case, the disease would be far easier to cure. Medical treatment has usually no great difficulty in controlling *undue* vital action ; the difficulty arises when this, so far from being in excess, is seriously diminished, as in malignant scarlatina. No slight remedial exertions are required at this time to re-establish a normal circulation, and to impart to the blood the properties of health. It has lost its natural arterial or vivifying qualities : it has become inordinately *venous*. Hence the sudden accumulation of it in all the organic tissues, the rapid development and progress of ulceration, the tendency of this to assume a dark and gangrenous appearance, the sharp and irritating discharge from the nostrils and posterior nasal cavities, occasioning soreness, and even blisters, the petechial discoloration of the skin, and, lastly, diarrhœa.

The morbid phenomena which are here enumerated are the ordinary characteristics of this kind of fever, *resulting from nervous depression, the deterioration of the blood, and*

its disordered distribution. Inflammation is a very subordinate element in the train of vitiated vital action. It exists at the beginning of the disease in a sub-acute form, but rarely gets beyond this, often falls beneath it.

The disease sometimes terminates fatally on the second, third, or fourth day, but only when it occurs in its most appalling manifestations, and usually from gangrene attacking the cesophagus or alimentary canal. When the early symptoms have been less severe, the patient occasionally sinks at the end of the first or second week from the aphthous state of the throat assuming a sloughing appearance. At a later period when the issue is unfavourable, this is to be traced to the continued depression of the vital powers, their general and extensive derangement, as displayed in the disordered secretions, the congestion of the viscera, and the disorganization of various tissues.

There are few diseases in which there is greater discrepancy among the practitioners of the old school, than concerning the principles of treatment in respect of malignant scarlatina. There is nothing settled or clearly defined on this important matter. One distinguished writer observes: that "medicine has little influence." He nevertheless recommends copious blood-letting, active purgatives, emetics in the early stage, and blisters. There can be no doubt that the success of the means used, whatever be their nature, depends greatly on the stage in which they are employed. At the commencement much good may be effected by judicious remedies perseveringly enforced; and likewise when the constitution has, to a considerable extent, overcome the depression which characterises the disease, but is yet suffering from congestion of the abdominal viscera, and extreme weakness.

It would be superfluous to attempt to prove that the malady consists in the thoroughly disturbed state of the

nervous system, the altered qualities of the blood, and the excessive accumulation of this in the internal and other organs. These are facts which none will dispute. They are patent to every one who has in any degree observed and studied the disease.

The question now naturally occurs, What are the general indications of treatment which the aggregate of the morbid phenomena described suggest? There are clearly two objects which force themselves on our attention, viz.: to stimulate and invigorate the nervous system: to arouse and re-establish the normal circulation of the blood, every step towards which creates of course a corresponding improvement in its properties.

When the affection is unmistakeably present, one of the first means which should be employed, and certainly one of the most active and efficient, is to envelop the body to the neck in a sheet, steeped in a weak solution of salt and water as warm as can be comfortably borne, the sheet being partially wrung out, covering this closely with dry blankets, sufficient not only to maintain, but to increase the original temperature of the application. The patient should be allowed to drink freely of cold water. If no inconvenience is felt, he may remain in this state with advantage for an hour, after which, being placed in bed, friction with olive oil, as previously recommended, should be used to the abdomen for a quarter of an hour or twenty minutes, and repeated every six hours until a marked change is evident in the character of the symptoms. The condition of the pulse, the heat of the body, and the expression of the countenance, will furnish clear indications of the nature and extent of the effects produced. If the case be one of extreme urgency, the other external measures may be repeated once in twelve or twenty-four hours.

If we consider the nature of the affection which is here brought under notice, the marked depression of the nervous system, the thoroughly disordered circulation, and the invariable tendency of the blood to accumulate in the internal organs, it may unhesitatingly be asserted, that there are no other general means, nor indeed any purely medicinal agents, though possessing important virtues, that will, in the same brief period, act as promptly and efficiently in correcting existing evils. The disease is not characterised by the disturbance of one particular tissue or viscus to which a remedy might have a specific application; but, on the contrary, the whole animal frame is involved in the induced derangement of the powers of life. The justness of this opinion will scarcely be questioned. Hence the necessity of energetic treatment, but of a kind that does not exhaust or weaken the body, but arouses it to more vigorous vital action,—imparting additional energy to nervous matter, and to the blood healthier properties.

If the heat of the skin be considerable at the commencement of the attack, which is only occasionally the case, and never long persistent in this form of scarlatina, a sheet immersed in cold water, holding in solution a small portion of common salt to render it more stimulating, might be preferable to warm applications. The temperature of the body, however, as a rule, is *insufficient, and the internal congestion too great*, to allow of such treatment. It would fail to give rise to powerful re-action, without which the employment of it would be injurious. The good effects depend entirely on the degree of the re-action which follows.

A well-known writer in treating of this disease observes, after showing that the object of all remedial measures should be to influence the circulation, that “the only remedy which can be said to act *directly* on the circulation is blood-letting,

general or local.”* The same doctrine is also laid down by others. Friction, and the other external means alluded to, will act *more directly on the circulation, and affect a much greater proportion of blood*, than can possibly be accomplished by the abstraction of the latter. It is only in the first stage of the malady, that venesection is at all admissible according to the experience of the enlightened allopath; and even then it only occasionally succeeds, from the low inflammatory action which is present, in so influencing the circulatory system at large, as to throw the whole mass of blood into vigorous motion, and as a necessary consequence establishing a normal distribution of it. If such is not the result of the abstraction of the vital fluid, every drop so withdrawn leaves the animal system less capable of contending against the disposition to functional and structural changes.

It is here important to remark, as having a direct reference to judicious medical treatment, that patients, after having overcome the severe and urgent symptoms of the affection, sometimes struggle for a considerable time, and often ineffectually, against the morbid effects which remain, as ulceration of the throat, enlargement and suppuration of glands, derangement of the mucous membrane of the respiratory and digestive apparatus, and congestion of the abdominal viscera, manifested in the irregularity and disturbance of their functions generally. Among other symptoms there is frequently a troublesome cough and difficulty of breathing, and the patient, instead of gradually gaining strength, continues for a while in a somewhat stationary condition, or slowly declines, the chylopoietic, and other viscera, being unequal to the sound digestion and thorough elaboration of the food received.

* *Elements of the Practice of Physic.* By DAVID CRAIGIE, M.D., F.R.S.E. Vol. i., p. 446.

In this state of the animal system, what single remedy, or aggregate of remedies, is so well calculated to effect a beneficial change in the powers of life as repeated friction to the abdomen? The exposition of the physiological principles on which it is founded, by no means difficult to understand,—apart from experience establishing its extraordinary efficacy,—places beyond doubt its practical value. There is no originality in the simple recommendation of it; but unquestionably in the views which explain the mode of its operation, and its utility in a wide diversity of diseases. This had not been attempted by any one previously. The fact that friction had occasionally been found of advantage, is very different from the fact in association with principles elucidating in a comprehensive manner the nature of its action, and its large sphere of application. In this consists the originality of my researches, and though at the present time they awaken no interest, and will receive little attention; nevertheless, if they rest on the broad foundation of truth they will ultimately be appreciated, and acknowledged as adding to the resources of the healing art.

The following extract from a journal of very extensive circulation, bearing on the subject of friction, is worthy of notice:—

“All practitioners are acquainted with the symptom called *nervous colic*, and the difficulty of relieving it. I have observed several instances of the complaint, and so long as I merely prescribed the usual antispasmodic remedies, I failed in effecting a cure. I have since, on various occasions, had recourse to a method which doubtless cannot boast of novelty, but which, when applied during the paroxysm, invariably succeeded in checking it at once. This method consists in *mere dry friction rapidly performed over the abdomen*.

“ Among other cases, I select the following, which I shall briefly relate.

“ While on duty with the 2nd battalion of my regiment in Africa, I was summoned to a soldier who was violently struggling on his bed, screamed loudly, and complained of intolerable abdominal pain. A few rapid questions having pointed out the nature of the case, I ordered two of his comrades to rub his stomach energetically with a flannel ball; the pains were at once much relieved and completely subsided in six or eight minutes. The sufferer then informed me that this was not the first attack of the kind he had been subject to, and assured me that he had derived equal benefit from no other mode of treatment.”*

There is no particular virtue in the flannel ball, nor indeed in the olive oil combined with friction throughout this work. *The important remedy is the friction.* The oil by lubricating the surface which has to be rubbed facilitates the operation, and prevents the unnecessary irritation of the skin.

§ 15. *Remarks on the frequent use of Plaisters, and other substances, which arrest or impede the cutaneous transpiration, in Pulmonary and Rheumatic affections.*

Having treated at considerable length of the diseases of the lungs and air passages, and likewise of rheumatism, it will not be uninteresting or uninteresting, before proceeding to the discussion of other matters, to offer a few observations on the common practice of applying to the chest, and other parts of the body, substances more or less impervious to

* *Journal of Practical Medicine and Surgery.* English edition, translated under the direction of the Editor, H. CHAILLON, M.D.; By D M'CARTHY, M.D.; and A. SPIERS, Ph. D. Vol. xxxi. Third volume of the English edition. Article 5945, p. 554.

transpiration: by many persons they are constantly worn during the winter months, and not unfrequently during warm weather. They are regarded as perfectly safe applications: that they can possibly do any harm is an idea which is never entertained; and, therefore, when the chest is delicate, or the lungs are suffering from disease, whether slight or severe, it is imagined that a plaister or hare skin applied to the thorax, must, under all circumstances, be an invaluable remedy in protecting the internal organs from the influence of cold. This impression is greatly strengthened by the frequent advertisements of interested parties, soliciting the attention of the public to the extraordinary virtues of the plaisters which they manufacture. The profession, who have not given the subject the consideration it deserves, are likewise in the habit of prescribing plaisters, and recommending the wearing of different substances on the chest, which do not allow of the free transmission of the perspirable matters thrown off from the cutaneous surface. The same line of conduct was formerly pursued by myself, but the injurious nature of the practice was forced on my notice in the following manner: About seven years ago a gentleman consulted me, who had a short, and occasionally a frequent cough, but not of such severity as to lead him to attach any great importance to it. He was advised by his friends to wear a hare skin on his chest, and this he had done for months when he came under my care. Of the presence of it I was not aware; nor did the character of the symptoms at the time suggest the necessity of a minute examination of the condition of the lungs, concluding in fact that the disease would yield readily to homœopathic treatment. This, however, for nearly a month, very much to my astonishment, effected no satisfactory improvement. I then determined to ascertain what light auscultation would throw upon the affection. When preparing to apply the stethoscope, he informed me that he

wore a hare skin, and supposed it was necessary to remove it to ensure a proper investigation. He admitted that so far from this having benefited him, the cough had gradually become more troublesome since he had used it. It then flashed across my mind, that such means were probably fraught with serious evil from interrupting the free transpiration of the skin. I advised him at once to discontinue it, and to rub the chest every morning with a coarse towel, steeped in a weak solution of salt and water cold, employing afterwards a dry coarse towel for several minutes. No change was made in the medical treatment. In little more than a fortnight he had entirely lost his cough, nor has he since been affected with any pulmonary disorder.

It is scarcely necessary to remark that this case made a strong impression upon me, and naturally led me to study the influence of such external applications on disease. In the course of my subsequent practice, many other instances presented themselves, in which hare skins, plaisters, and other substances, impervious to transpiration, had been long or constantly worn by patients, occasionally from an imagined delicacy of the chest, and not from the existence of any actual disorder. It is a common idea that persons cannot do wrong in keeping the chest warm by such means.

It appeared evident that in many of these cases disease had been produced by them, and when present had been aggravated by their use. It very frequently happened that an unequivocal improvement, and in a short time, followed their discontinuance; and further, that chest affections did not yield satisfactorily to medical treatment when substances of this kind were worn, at the time unknown to myself. The result of my researches, closely directed to this subject, has convinced me, that all such applications are injurious, and in fact are the cause of considerable disease. In my opinion they sometimes give rise to pulmonary consumption.

As my observations are not addressed to the profession, but to the public at large, I shall endeavour to explain the physiological principles, proving beyond doubt the prejudicial agency of things of this nature, which, from ignorance of their action, are extensively employed as remedial agents.

All organs of the animal system, whether internal or external, have *excretions* from their outer surface, varying in their nature and degree, according to the functions performed, and the state of the vital powers. When the blood is rich in carbon, as in cattle fed to be killed, and in persons who indulge grossly the appetite, and at the same time indolent in their habits, these excretions are usually found in the form of abundant fat upon the heart, the kidneys, and in connection with other organs of the body. The presence of it is proof of the embarrassment of the animal system; or, in other words, of the difficulty which was felt in disposing of superfluous chemical elements: the appropriation of them after this manner becomes a species of disease. In these instances they are in excess. In the natural or perfectly healthy condition of the animal economy, matters of this kind are freely eliminated from the external surface of living structures, whatever region these occupy, enabling them to perform with efficiency the varied functions of life. The retention of such matters, or interference with their escape from the external surface of any organ, is the certain precursor of disease; and when such disturbance of vital processes is not the result of the injudicious conduct of man, it is evidence that disease already exists.

The cutaneous surface may justly be regarded as the external lungs of the animal system, and certainly it is in intimate functional relation with its minutest structure. Experiments have clearly proved, that when transpiration from the skin has been interrupted in the lower animals, death quickly ensues.

Physiologists have accurately determined the nature and amount of the cutaneous excretion. "It was estimated by Lavoisier and Seguin, that eight grains of perspiration were exhaled by the skin in the course of a minute, a quantity which is equivalent to *thirty-three ounces* in twenty-four hours. Of this quantity, a large proportion is, naturally, water: but nearly one per cent., according to Anselmino, consists of solid substance; of the latter, one hundred parts contain about twenty-three of salts, the remainder being organic matter. The substances contained in the perspiration are, animal matter, gases, acids, alkalies, calcareous earth, metals, salts, and probably a simple body, sulphur. Among the animal matter occurs a small quantity of fat. The gases are, the carbonic acid, which is most abundant after a meal of vegetable food, and nitrogen, which is most largely given off after animal diet. The acids are, butyric, lactic, acetic, hydrochloric, phosphoric, and sulphuric: the alkalies, soda, potash, and ammonia: the calcareous earth, lime, in combination with phosphoric acid: the metals, peroxide of iron, and, possibly, copper and lead in minute quantities: and the salts, a long list formed by the combination of the acids with the alkalies and lime."*

The foregoing particulars are from a writer who has given great attention to the functions of the skin, and its disordered condition. They are interesting, and deeply instructive in one point of view: they show the great variety of matters thrown off from the cutaneous surface, and the large quantity which the aggregate of them constitutes. Mr Abernethy, who carefully investigated this subject, came to the conclusion that $2\frac{1}{2}$ pounds was the amount exhaled from the skin in twenty-four hours. Other physiologists have likewise entered upon the same field of inquiry,

* *Healthy Skin. A Popular Treatise on the Skin and Hair.* By ERASMUS WILSON, M.D. P. 48.

and though the results at which they have arrived offer discrepancies, they do not substantially affect the calculations which had been previously deduced from direct experimental researches.

The vast importance of the skin, as an excretory organ, has been strikingly illustrated, by showing the number of pores by which transpiration escapes, and the length of the channels through which it passes to the surface of the body. It is stated, that "on pulps of the fingers, where the ridges of the sensitive layer of the true skin are somewhat finer than in the palm of the hand, the number of pores on a square inch a little exceeded that of the palm; and on the heel, where the ridges are coarser, the number of pores on the square inch was 2268, and the length of tube 567 inches, or 47 feet. To obtain an estimate of the length of tube of the perspiratory system of the whole surface of the body, I think that 2800 might be taken as a fair average of the number of pores in the square inch, and 700, consequently, of the number of inches in length. Now, THE NUMBER OF SQUARE INCHES OF SURFACE IN A MAN OF ORDINARY HEIGHT AND BULK, IS 2500; THE NUMBER OF PORES, THEREFORE, 7,000,000, AND THE NUMBER OF INCHES OF PERSPIRATORY TUBE 1,750,000, THAT IS 145,833 FEET, OR 48,600 YARDS, OR NEARLY TWENTY-EIGHT MILES."*

The skin exercises another function besides that of transpiration. The blood which is brought to it, and distributed through an immense net-work of capillaries or minute vessels, undergoes important chemical changes from the action of the oxygen of the atmosphere. It is indeed contended by some physiologists, that these changes, by imparting to the circulating fluid, superficially,

* ERASMUS WILSON, M.D. *Opus cit.*, p. 43.

additional vital properties, are influential in the maintenance and dissemination of heat throughout the animal system. To some extent this is unquestionably the case; but in my opinion the effect, consequent on such exposure of the blood, has been overrated. The facts on which the argument is founded, and from which particular conclusions have been drawn, and regarded as indisputable truths, if philosophically analysed, may be shown to admit of other explanations. The chief of these facts, is the cooling of an animal, or the diminution of its temperature, when the surface of the body is covered by a substance which altogether interrupts perspiration. In this case there are physiological effects produced accounting for the result which have in no degree been taken into consideration. The lowering of the animal heat has been ascribed to the *exclusion* of the action of the atmosphere upon the skin, when, as it has already been observed, other views might be adduced, that would elucidate this, and other phenomena, consequent on the exclusion of such action. This, however, is not the occasion to enter on a scientific inquiry of this kind. The subject in hand does not necessitate it.

The light, and the circumambient air, which act powerfully on the animal and vegetable kingdom, are instrumental in facilitating the escape of the useless or superfluous elements of both. Their utility, in respect of the external surfaces on which they operate, consists mainly in conducing to the *emission* of them; and not in contributing to the absorption of matters from without through the channels furnished by the surfaces in question. The plant becomes sickly and dies, when the dust on its leaves prevents the elimination of its gases and other substances; and when any portion of the skin is similarly circumstanced, though from different causes, prejudicial effects invariably follow. These may not be evident at the time; nor in the disorder which ensues,

whether immediate or remote, may they be at all suspected. We may, however, rest assured, that whenever we infringe or disturb an organic law, there is always a penalty annexed to the violation of it. To interrupt the natural perspiration from the chest, or from any other bodily region, is in contravention of such law, as comprehensive, and as important as any expressed in the actions of the animal system. The internal, and other organs, in the exercise of their functions, have created matters which, for the continuance and well-being of life, must be allowed free issue from the cutaneous surface. To arrest this in any degree gradually leads to the closing of the fine pores which are the channels for its escape. What is the consequence? The refuse or superfluous elements are thrown back upon the organs which produced them. The inevitable effect is to disorder the actions of the latter, but in what way, or to what extent, it is not easy accurately to determine. That derangement of some kind will arise is indisputable. If living structures cannot get quit of the useless substances which result from their operations, these operations necessarily become embarrassed, are carried on under disadvantages, and ultimately end in the manifestation of disease.

It can scarcely be doubted, that the cutaneous perspiration *varies in different localities*, according to the functions and activity of the organs which lie immediately beneath the integuments of the body, or which are powerfully excited by muscular movements. Hence the importance of the surfaces represented by the thorax, the abdomen, the lumbar, cervical, and dorsal regions. When we take into account the offices of the lungs and heart, but especially of the former, and of the membrane which lines the chest, it will be admitted that the matters discharged from the external surface of the latter are considerable. Have we not indeed some evidence of the fact when these are partially suppressed by the in-

jurious action of cold, in the sudden and abundant serous or watery effusion, or of pus, into the cavities of the thorax? Whether the fluid be the result of inflammation or not, does not materially affect the question. The readiness with which it is poured out, and the amount which occasionally exists, show that the membranes which secrete it are possessed of great vital endowments. At this time they are morbidly excited, and eliminate within substances, which, in health, would, in other forms, have been thrown off from the general surface of the body.

There are few parts of the animal system more frequently attacked by disease, regarded as rheumatic in its nature; or more frequently the seat of pain or of uneasy sensations, at times extremely difficult to define, than the lumbar region; which is chiefly to be ascribed to the vital energies of the muscles, and of other tissues, belonging to this region, roused into vigorous activity by walking, and other muscular efforts; and the more or less sudden depression of this activity by cold, or the chilling influence of currents of air. Entire rest, immediately after violent bodily exertions, without any appreciable external circumstances, except the dampness of the clothes from perspiration previously absorbed, will often be followed by distressing stiffness or pains in the loins.

Whether the affections which occur be acute or chronic, a very common practice is to apply plaisters; and some persons have an impression, that unless they were so protected and strengthened they would be unable to pursue their ordinary occupations. That such means occasionally afford relief will not be denied. It must not, however, be inferred that they are, therefore, unobjectionable; or that the benefit obtained has been without injury or disturbance to some of the internal organs.

There is nothing more important to keep before the mind, in the treatment of many diseases, than the relations which

connect together, directly or indirectly, neighbouring or remote structures. It frequently happens in practice, that while remedies apparently cure the particular affection for which they are prescribed, they give rise to functional disorders, and subsequently structural mischief, in contiguous or distant parts of the animal system. The occurrence of such evils, or the possibility of them, is a matter which very rarely awakens any consideration. The anxiety is to get quit of the existing affection, and the practitioner does not sufficiently consider the nature of the means which he uses, satisfied if they attain the object he has in view.

Since this subject has prominently occupied my attention, and led to inquiries which otherwise would not have been suggested, it has appeared to me a clearly established fact; that the suppression of perspiration from the loins, by the application of plaisters, not unfrequently *sets up chronic disease in the hip joints*, as shown by permanent lameness, constant, or frequent recurring pains. The disease, in the first instance, was probably superficially seated, implicating simply the lumbar muscles and their nerves. The plaisters, or other substances, analogous in their effects, which are generally used under such circumstances, throw the matters which should have a free external outlet upon the internal organs, and among these, upon the hip joints. It is evident that they must go somewhere. If not allowed to escape in their natural direction according to the requirements of health, they take another course, *but not until they have blocked up the pores or channels through which they should be expelled*. This is one of the first effects which arises. To whatever extent this takes place, in such degree will the organs, in structural and functional connection with the lumbar region, be disordered. It cannot possibly be otherwise.

Every practitioner must be sensible how intimate are the vital relations between the hip joints and the cutaneous sur-

face of the loins, displayed in a striking manner by the application of external remedies in diseases of the former. Can it, therefore, be imagined, that in obstructing the perspiration, and closing the pores of the skin, no injurious consequences will follow? These may not present themselves to the professional or non-professional mind in a form to awaken suspicion as to the nature of their origin. They may not, in fact, be in connection with the hip joints, but with the kidneys, the urinary bladder, or the lower portion of the intestines. How little is known of the causes which produce and influence the course of diseases! Were we capable of detecting the first steps of morbid action tending to them, we should discover that, in numerous instances, the causes were functional derangement, slight and seemingly unimportant: and our wonder would be excited that such should be the foundation of formidable and often incurable affections. These would probably be traced to arrested cutaneous perspiration restricted to a limited space; or to the disturbance of some secretion, that required a lengthened period to manifest itself by pain or by any obvious derangement. A poet, in speaking of pain, by which the causes of disease are implied, has in part expressed in the following exquisite lines the idea intended to be conveyed by the foregoing observations:—

“From pain no mortal heaven has yet excused;
It tends alike, the couch of straw and down,
Th’ arthritic monarch and rheumatic clown;
Darts in the whirlwind—floats upon the breeze—
Creeps down the vales, and hangs upon the trees—
Strikes in the sunbeams—in the evening cool—
Flags on the fog, and stagnates in the pool—
In films æthereal, taints the vital air—
Steals through a pore and creeps along a hair—
Invades the eye in light—the ear in sounds—
Kills with a touch, and at a distance wounds.”*

* *The Poetical Works of the late Richard Furness; with a Sketch of his Life.* By G. CALVERT HOLLAND, M.D.

A case of considerable interest came under my notice three months ago, showing, in my opinion, the prejudicial effects of plaisters. The case is a very remarkable one, whatever interpretation be given of the singular phenomenon which characterised it.

A gentleman, forty years of age, stout, and in appearance healthy, leading an active life, and living in the country, consulted me concerning a dull, heavy pain across the loins from which he had suffered several years: different kinds of treatment had been employed, but with no satisfactory results. After he had described his complaint, he stated that he was then wearing a plaister and had worn it six or seven weeks, but had not derived from it the slightest benefit. I advised him at once to discontinue it, and prescribed what appeared to me appropriate homœopathic remedies: and further recommended the lumbar region to be rubbed, night and morning, with a little warm olive oil. After the friction had been used for three or four days, his wife was astonished to observe numerous minute white substances issue from the skin, and she fancied that they possessed motion. At his next visit he brought me a quantity in a bottle. I got a gentleman familiar with the use of the microscope to examine them, and he stated that they were undoubtedly organized beings. Anxious for more precise information on the subject, I forwarded a number of them to my friend Dr Ryan,* who, from his previous chemical and philosophical pursuits, was admirably calculated to enter upon an investigation of this nature. He kindly favoured me with the following remarks: "The bodies, in the spirit, are without doubt, *acarides*, but I do not recognise the species: I fancy they have been a good deal mutilated, either while being caught, or by being shaken in the bottle. I, at first, thought that the creature might be the *acarus folliculorum*, of Dr

* Editor of the *Monthly Homœopathic Review*.

Simon, of Berlin,—the *steatozoon folliculorum* of Erasmus Wilson, but the great size precluded the possibility.

“The bristly appendages to the legs, and the fact that the legs spring from the posterior part of the thorax, remind me of the *acarus scabei*: but the body of the insect is longer and more oblong ; besides the greater size.”

The creatures issued from the skin, after each rubbing, for eight or ten days. The friction was continued afterwards for nearly three weeks. Of the name or composition of the plaister the patient could give me no information. In little more than a month he was cured ; nor has he since had any return of the pain in the loins.

In whatever point of view this case be considered it cannot fail to excite attention, and will probably give rise to various speculations. Whether the animals are to be ascribed to anything that was originally upon or belonging to the plaister, or to the morbid conditions of the cutaneous tissues consequent on arrested perspiration, is a question that might possibly be raised. The important fact remains,—their existence, and the expulsion of them followed by the speedy cure of the patient.

At the present time much is said of the wonderful virtues of the Turkish bath, and of the hydropathic system of treatment. Judiciously prescribed they are certainly of great value, and may often alone, and in combination with medicinal remedies, be used with great advantage. The employment of them requires, however, in many cases, the wisdom of practical experience, and the discrimination of sound judgment.

The benefit which results from the action of remedial agents of this description, consists mainly, though not entirely, in the thorough cleansing of the skin,—in promoting the free discharge of matters from within, outwards. Many forms of bodily ailment arise from the retention of them.

The liver, the spleen, and other viscera, become congested, and inadequately perform their functions. To establish, under these circumstances, a healthy state of the skin, influences directly every internal organ. It arouses into vigorous motion the slowly circulating or stagnant blood ; and at the same time excites and strengthens the nervous system, enabling it to impart to all tissues fresh and stronger vital currents.

It may be laid down as an unquestionable fact, particularly in persons of sedentary habits, or whose pursuits are accompanied with little bodily exertion, that unless some means be occasionally employed to stimulate, and create a sound condition of the cutaneous surface, *perfect health is scarcely possible*. The neglect of the necessary ablutions is the occasion of many diseases the origin of which is never suspected, as weak and embarrassed digestion, cough and shortness of breath, the derangement of the secretions generally, rheumatism, and other painful affections, and multiform eruptions of the skin. Attention to what is here pointed out, is much more imperative on the class of persons alluded to, than on those who lead active lives, or whose occupations call into vigorous play the muscular system. In the latter, the circulating fluids are in excited movement, are freely distributed throughout the body, and have no difficulty in finding a ready exit for their useless elements. Though the duty of ablution may be less urgent in such persons, it will nevertheless be conducive to a higher state of health.

Long and careful observation has indeed led me to conclude, that the wearing of substances on the chest, more or less impervious to the transmission of perspiration, *causes the absorption of its muscular and adipose tissues*. This certainly might be calculated upon from a knowledge of physiology. An unnatural degree of heat in this region of the body is kept up, and the vital actions superficially must necessarily be unduly excited. It is a law of the animal

system, that all such actions, to be continued, must be supplied with what is essential to the maintenance of them, and this will be largely furnished by the tissues the seat of the disordered vital processes.

After the foregoing lengthened observations concerning the functions of the skin, and the injurious effects of external applications, which arrest or impede cutaneous perspiration; it is desirable to show in what way the chest, regarded as delicate, *though not suffering from actual disease*, may be strengthened, and rendered capable of resisting with comparative ease the depressing influence of external cold: and further, what mode of treatment may be employed with advantage in the frequent affections of the loins characterised by pain, stiffness, or other symptoms.

First, in respect of the chest, the object to be attained is to lessen its susceptibility to atmospheric influences, and this can be accomplished only by stimulating and invigorating its nervous and circulatory conditions. It should be rubbed every morning for two or three minutes with a wet towel, using tepid water at the commencement, but in the course of a few days employing cold: a dry towel should afterwards be used for five or seven minutes until the chest is quite in a glow. If these means be carried out, as a regular practice throughout the year, the muscular, and other tissues of the chest, will be *developed*,—will afford a more substantial covering to the cavity,—and external cold will have little effect in depressing the vital actions on the surface.

Friction, applied as above recommended, exerts the same kind of influence on the integuments of the thorax, as the active movements of the arms and legs do on their respective muscles. The nerves and blood-vessels are roused to additional duties, and one common result invariably follows, viz.: *the growth, and the greater vigour of the parts directly acted upon.*

It is then in the power of every individual to strengthen the chest, and in fact so to diminish its susceptibility to cold, that there will be little to fear from any ordinary exposure to it. Let those who are not suffering from organic disease of the lungs or heart test the value of the physiological principles laid down. The experiment will not disappoint them.

In this climate, in which the transition from heat to cold, and the converse, is great; and in which the east, or north-east winds prevail during a third of the year, cutting, and searching in their influence, it is never prudent for the delicate to be without flannel next the skin. The thickness of it may of course be adapted to the season: nor do I think that any addition should be made to it in regard to the chest even when the weather is severe. It will not be wanted if the means be energetically used which have been pointed out.

The best protection to this region of the body, *are the healthy and vigorous actions created in it*. If further warmth be required from the state of the weather, and exposure to it, it should be furnished by some part of the *outer* clothing, which, for the brief period it is worn, will not disorder the natural functions of the skin.

The affections of the loins, which are sometimes exceedingly acute, if not promptly relieved, or properly treated, become chronic, and are not unusually difficult to cure. In the acute or extremely painful stage, the parts should be rubbed with warm olive oil, morning and night, and in the interval, several folds of flannel should be immersed in hot water, wrung out and applied, enveloped in oiled silk, mackintosh, sheet gutta-percha, or some impervious material. There are few cases that will not yield readily to this treatment. The pains in the loins sometimes originate in or are connected with disease of the kidneys. The remedial

measures in question will be found efficacious under these circumstances, though not to the same extent as when the muscular tissue is primarily alone affected.

The chronic disorders of the loins, regarded as rheumatic in their nature, the symptoms of which are various, as pain, stiffness, dull, heavy, cutting or dragging sensations, are often produced by derangement of the abdominal viscera, or are kept up and aggravated by it. This is more frequently the case than is generally imagined; and hence the success of the means employed will depend on the accuracy of the diagnosis which is formed, and the selection of remedies adequate to the requirements of the complication, if such exist. Whether the external disease be primary or secondary, but especially in the former case, friction applied, as previously advised, will seldom fail to be followed by the most gratifying effects. In addition to this remedy, if the symptoms have existed for a lengthened period, or are intractable to medical treatment, a bandage formed of two folds of flannel, seven or eight inches in breadth, to be worn during the day across the loins, is an admirable application. With respect to this, or anything of the same kind worn upon the chest, it is important to remark, that the flannel should be occasionally washed, otherwise, from the absorption of perspiration, it arrests the free passage of matters from the skin and becomes a positive evil.

There is another disease, which has often been confounded with rheumatism, characterised by acute pain, and generally tedious, as well as difficult, to cure, viz., *sciatica*,—an affection of the sacro-sciatic nerve, to which the treatment here laid down will, on many occasions, be found as applicable, and as efficient in its operation, as in the other cases brought under notice. Of the nature of this neuralgic affection little is accurately known. The nerve may be the seat of inflammation, irritation, or of congestion, or at times may

be subject to pressure from contiguous structures. In the efforts to cure it, independently of other means, great good, in my practice, has been derived from the steady use of friction to the lumbar region, *and the wearing of a flannel bandage*. Different external applications, intended to produce more or less of irritation upon the skin, have often been employed in this disease, but in my opinion they not unfrequently tend to aggravate it. The treatment pursued should be rather soothing, than unduly stimulating in its influence, and of this character is friction, and the genial warmth which flannel imparts.

Before concluding this branch of the subject, viz., the consideration of the value of these remedial agents in affections of the lumbar region, I shall briefly advert to their efficacy in other diseased conditions of the body, in which their utility has not suggested itself to the profession. They are of great service in many of the disturbed states of the sexual organs of the female, as the retarded establishment of menstruation, its subsequent interruption, or irregularity in its appearance, its scantiness or excess when it occurs, and the severe pains which sometimes accompany its periodical return.

Disorders of this kind are constantly coming under the notice of the profession, and are very variously treated, but certainly homœopathically with much greater advantage, than by the routine or ordinary practice followed by the prevailing school. Among the adjuncts which should not be lost sight of in such cases, is friction to the abdomen and lumbar region, and the wearing of a flannel bandage across the loins. The latter alone will often be of signal benefit. On this matter I speak from extensive observation. Many to whom it has been recommended, unaccompanied by medical treatment of any kind, have expressed to me the great relief they have derived from it. We are, however, too apt

to disregard or undervalue that which is simple and easy to command; forgetting, or being insensible of the fact, that were we familiar with the constitution of the animal system, with the origin and nature of disease, and with the influence which remedies are capable of exercising, or their precise mode of action, medical treatment would be distinguished not less by its simplicity than efficiency.

§ 17. *The application of Friction in cases of Hæmorrhoids or Piles.*

It has been well observed by a distinguished writer, that “there are few diseases upon which so much has been written,—ignorantly and dogmatically written,—as upon hæmorrhoids. In modern times, the pathology and treatment of this disease have been too generally viewed in a limited point of view, and usurped by persons who have endeavoured to convince the public that they have made it the subject of especial investigation, and even of exclusive study.”*

It is not my intention to enter at length upon the consideration of this malady. I could not, however, in this inquiry concerning the virtues of certain adjuncts, exclude it from notice, as there are indeed few diseases, in which their value, as important practical remedies, is more manifest, than in their application to hæmorrhoids, in particular, but frequently existing, states of the animal system.

The causes which give rise to piles are extremely various, as obstinate constipation, a full habit of body,—ordinarily from an undue indulgence of the appetite,—abuse in the use of stimulants and of strong cathartics, excessive exercise on horseback, pursuits which necessitate long sitting, or are accompanied with little bodily activity, and other circumstances which enfeeble or disorder the vital functions.

* Dr COPLAND, *opus cit.*, vol. ii. p. 122.

The disease rarely occurs except in mature age, and it is generally found in persons of a bilious, or sanguineo-bilious temperament, and of a plethoric habit of body: it is likewise observed in those, more especially females, in whom there is no redundancy of blood, but an irregular distribution of it. It is in excess in the venous system;—a condition which is usually attributable to sedentary occupations, and to a mode of living insufficiently stimulating and nourishing to impart a healthy tone to the powers of life.

Piles are either *external* or *internal*, *blind* or *bleeding*. When blind there is no discharge from them, either mucous or sanguineous. Much has been written on the pathology or nature of them, and great discrepancy of opinion has prevailed; nevertheless, if the views advanced be philosophically analysed, the difference in reality will be found less than is generally supposed. By the early pathologists piles were described as arising from a *varicose* state of the anal or hæmorrhoidal veins, that is an enlargement or swelling of them. Subsequent and more elaborate researches, the accuracy of which it is not intended to call in question, prove, that they are first seen in the form of small, fleshy tubercles, generally of a brownish or pale red colour. They have rather a solid and spongy feel, and when cut into, present a surface more or less compact and bloody, from which blood oozes, leaving the texture pale and more relaxed. Piles very often contain a central cavity, filled with fluid, or coagulated blood, and lined with either a smooth or granulated cyst. The cavity usually does not exceed the size of a pea; but it is sometimes large enough to hold several drachms of blood. More generally, however, there is no regular cyst, but the substance of the tumours is infiltrated with blood, which eventually becomes dark and coagulated. The permanence of them is referred partly to the development of the capillary vessels, by which the interstices are

gradually obliterated, and partly to the coagulation and organization of the effused blood.*

According to this description hæmorrhoids originate in congestion of the capillaries or minute vessels situated within the anus, or descending from the rectum, giving rise to small tumours, the mucous and subjacent tissues being likewise infiltrated with blood. The views previously entertained ascribed the disease to a *varicose* condition or distention of the hæmorrhoidal veins. Hence the impediment to the passage of the fæces, the acute suffering accompanying the effort, and the bleeding which followed and occasionally to a considerable extent.

These pathological doctrines are not so distinct or opposed to each other, as writers generally seem to imagine. The two diseased states, in my opinion, must almost necessarily coexist; and as a rule, the tumours, and the infiltration of the mucous, and its associated tissues, will be the consequence of a *varicose* state of the veins; and at times the unnatural enlargement of them will alone constitute the presence of piles. Were it indeed granted that these tumours, and the other morbid effects, were the first step in the train of morbid action, is it not clear, that such local embarrassment in the circulation of the blood would inevitably disturb that of the veins or larger vessels in connection with the diseased structures, producing in them distension or what is implied by the term *varicose*?

It has already been remarked, that the practitioner frequently errs in looking upon the malady which he treats as purely local, or as having no intimate and important relations to other co-existing conditions of the animal system, —conditions out of which the particular affection often originates. This is strikingly the case with respect to hæmorrhoids. How few who undertake the cure of them, what-

* MASON GOOD, vol. i., pp. 392-3. Third edition.

ever be the stage in which they present themselves, deem it necessary to investigate the state of the vital powers at large, to determine how far the liver, and other abdominal viscera, are implicated in the local mischief; or in fact what inferences may justly be drawn from the general aspect of the patient, his habits, and other circumstances essential to an accurate and comprehensive view of the nature of the disease, which, superficially considered, appears alone to claim attention.

Whether the constitution be plethoric,—too abounding in blood,—or characterised by the disordered distribution of this, as shown by the disproportionate determination of it to the venous system, piles, occurring in either state of the body, are not to be viewed simply as an affection of the hæmorrhoidal veins, unaccompanied by other disordered vital action. This would scarcely be less absurd, than to regard typhus fever, when fully developed, as seated in the brain, lungs, liver, or any particular organ. The instances are indeed few, in which the origin and continuance of hæmorrhoids are not to be traced to the derangement of some of the abdominal viscera; or such a state of the veins in connection with them as impedes the return of blood from the lower portion of the intestines. Hence in the treatment of them, for this to be successful, the measures employed should be of such a nature as is calculated to correct this disturbed condition of the circulatory system. In proportion as this is effected, the distressing disease of the rectum will be relieved: the pain, the discharge of blood, and other symptoms, will be greatly lessened; and the case, if it has not been neglected or improperly treated, will be cured without much difficulty.

In every form and stage of hæmorrhoids, the great object should be, so to influence the circulation as to re-establish the natural distribution of the blood, by which

the internal organs, and in particular the venous system, will be relieved of the congestion that is always present. According as this is effected, the hæmorrhoidal, and other veins, will be proportionately disburthened of that which oppresses them. The allopathic practitioner endeavours to attain this end by general and local bleeding, and by the frequent exhibition of aperients.

When the body is extremely plethoric, and the habits of the individual, which is too often the case, keep up this condition, creating a mass of blood which cannot possibly be retained and appropriated to the advantage of the functions of life, the urgency of symptoms may necessitate the abstraction of a portion of it; but this will afford only a temporary, and not a substantial relief. The only way in which the evil can be permanently or satisfactorily corrected, is by a thoroughly altered course of life in respect of diet and of exercise.

There are few, if any diseases, in which a cure, and the prevention of a relapse, depend so much on the conduct of the patient, as hæmorrhoids originating in and maintained by a plethoric state of the constitution. The redundancy of blood which is formed, if it cannot be legitimately and profitably disposed of in the promotion of health and bodily vigour, must have some outlet; failing to find this in some hæmorrhagic discharge, it gives rise to inflammation, fevers, congestion of the abdominal viscera, apoplexy, and other disorders. Disease is always on the threshold when such is the state of the vital powers resulting from the habits and the constitution in question.

The necessity of an issue for the blood, is, in such cases, shown by the presence of piles: and in other instances, in which it is not in excess in the animal system, a necessity of another kind exists, viz.—the more equable distribution of it.

The structural and functional endowments of the rectum, its relations to other parts of the animal system, and the circumstances by which it is liable to be influenced, readily account for the diseases to which it is subject. It is the termination of the intestinal tube, and is remote from the heart the direct agency of which weakens with the distance: the blood in its numerous veins has to be conveyed from below, upwards; or, in other words, it has to ascend against gravity: the same vessels, and their associated arteries, are disturbed by the disorders of the abdominal viscera,—their frequent derangement from a variety of ingesta, and especially from inordinate indulgence in stimulants.

Constipation, and the use of purgatives to correct it, are among the common causes of piles, and of other affections of the rectum: the excessive gratification of the sexual passion exerts a powerful effect on the functions of this intestine by rousing its circulation, and ultimately leading to the congestion of it,—an influential step towards structural changes. In females, pregnancy is another cause, partly from the pressure of the fœtus on the pelvic veins, and partly from the determination of blood to the rectum,—the uterus under such circumstances variously affecting contiguous structures.

In this inquiry the important consideration is in reference to the treatment of hæmorrhoids, what is the state of the animal economy, or of any of the viscera, coexisting with them? Whether the blood be redundant; or only disordered in its distribution, the venous system, and in particular the abdominal portion of it, has it in excess. This will be more or less the case in every stage of the disease: in fact this originates in such abnormal condition and is aggravated by it. To some extent the same view is entertained by other writers; and hence the employment of general and local

blood-letting, and the frequent use of purgatives to relieve this internal congestion.

When the constitution is plethoric, and the habits of the individual favour the production of blood, and no remonstrance will induce a modification of them, which is not at all unusual, such person should be grateful for the presence of piles and for the discharge to which they give issue. They are a protection against greater evils. If he will not control his appetite, and be otherwise regulated in his conduct, medical treatment, whatever be its character, though it may subdue urgent and distressing symptoms, will not promptly or *safely* correct the disease; nor would the practitioner, under such circumstances, be justified in attempting to arrest a discharge which nature in her difficulties has set up.

A case, such as is here described, came under my notice a few years ago. It was that of a gentleman in the prime of life, of full habit of body, commanding and enjoying the good things of the table. He had piles, and suffered from them several years; and though they were occasionally exceedingly painful and greatly inconvenienced him, they led to no substantial alteration in his daily routine of existence. At length a fistula was the result of which he was subsequently cured by a surgical operation. For a time he was in high health and spirits, but afterwards became less disposed than ever to take exercise, was passionate, irritable, and annoyed by the merest trifles. He is now afflicted with ~~an~~ incurable malady—a *softening of the brain*,—*the consequence of the cessation of a long established hæmorrhage from the rectum*. Such instances are far from being of rare occurrence. It does not, however, follow that the mischief induced will be an affection of the brain. Other organs of the body are equally liable to be attacked, as the heart, the liver, the lungs, and kidneys; and they are frequently the

seat of structural changes having the same common origin the nature of which may not at all be suspected.

In the exercise of the medical profession we meet with many persons suffering from hæmorrhoids, who in constitution and habits differ greatly from those to whom the foregoing observations apply. There is not the same robustness of frame or affluence of the vital powers, as shown in the strong and full pulse, and the strikingly healthy expression of the countenance; nor the same decided disposition to indulge in free and generous living. On the contrary, the countenance has a bilious, sallow or sickly appearance; and on inquiry it is found that such persons have been subject to indigestion in some of its varied manifestations, as flatulence, pain or weakness of the stomach, the derangement of the liver, as indicated by its deficient or vitiated secretion; the disordered action of the kidneys, and constipation. The latter symptom is alluded to by writers as one of the chief causes of piles, the passage of accumulated or hardened fæces giving rise to straining by which the rectum is unduly excited and unnaturally distended. When piles are present these are circumstances which will greatly aggravate them; and an important part of medical treatment consists in counteracting influences of this kind.

To form, however, a just view of the origin of hæmorrhoids, we must endeavour to ascertain the state of the abdominal viscera which has produced and coexists with the torpid state of the bowels. This in itself is evidence of the derangement of the circulatory system,—of the irregular distribution of the blood,—in fact the accumulation of it in various of the internal organs by which their functions are disordered, *is in many instances the occasion of constipation*; the latter being an effect of this condition of the alimentary canal which is the cause of piles. The constipation is not the cause; nor will the means ordinarily used to remove this effec-

4

usually correct this local derangement of the circulation. They may afford temporary relief; and the more regular the functions of the bowels become the more readily will the disease yield to judicious treatment. The regularity of their action is essential to a speedy and permanent cure. But blood-letting, whether general or local, or purgatives, were they admissible in the constitution which is here contemplated, will very rarely establish such result. But why employ remedies of this kind which weaken and exhaust the animal system, when this is not suffering from a *surplus* of blood, or exuberance of vital energy, but from a thoroughly disordered state of the circulation,—*the congestion of the abdominal viscera*?

The homœopathist in the treatment of this pathological state, and the symptoms which accompany it characterising the presence of piles, finds valuable resources in the virtues of *aconite*, *belladonna*, *nux vomica*, *arsenicum*, *sulphur*, *antimony*, *mercurius*, *carbo-vegetabilis*, and *lycopodium*. Nevertheless if the case be one of aggravation, and, as frequently happens, has been neglected, advice not having been sought in the early stages of the affection, these remedies, like all other medicinal substances which may be prescribed, are invariably tedious in effecting a cure; nor can it possibly be otherwise from the existing state of things. The capillaries, and other vessels of the rectum, are oppressed with blood, and a corresponding condition prevails throughout the abdominal viscera, to a greater extent in some of these than in others. In some the contents of the veins are at rest, and in others are comparatively motionless. It is, therefore, clear, that one of the principal indications of treatment, and one which should be constantly kept in view, is so to influence the circulation as to *re-establish the natural distribution of the blood*, the success of the means used depending on the degree in which this is attained.

It is further important to remark, that when piles have existed for any length of time, in the class of persons under consideration, the digestive organs generally are disordered, so that the treatment to be beneficial must be applicable to such derangement, otherwise it will fail to correct the local disease to which the attention is particularly given. The latter in fact mostly springs out of the former.

One of the measures which should be employed in such cases, is friction to the abdomen, and clearly not on hypothetical grounds, not on assumptions which do not admit of proof. The pathology or nature of the affection is not a matter involved in doubt; nor will those who have studied it question the soundness of the views laid down. The presence of piles co-existing with the other symptoms described, is evidence of the disturbance of the circulatory system,—of the undue accumulation of blood in certain of the abdominal viscera: when this is not the cause of hæmorrhoids, it is at least the occasion of their persistence and of the difficulty experienced in the cure of them. After the elaborate elucidation of the effects which necessarily flow from the use of friction, steadily and judiciously employed, and of the wide diversity of morbid conditions in which it is invaluable as an adjunct to medical treatment, it is superfluous to add additional observations to what has been already advanced. The use of it in my hands, under the constitutional circumstances stated, has been followed by the happiest results. In the course of ten days it has considerably relieved the disease of the rectum, and at the same time has, in a marked degree, improved the health of the patient. One of the first and most obvious indications of its salutary influence, is *the altered expression of the countenance*, its greater clearness, shewing that the circulatory system has been beneficially acted upon,—that the blood has been roused to more vigorous motion and has acquired higher vital properties.

It is acknowledged by the allopath, that one of the chief objects to be attended to in the treatment of piles, *is to regulate the bowels*, to secure easy and natural evacuations. Hence the constant exhibition of different aperients. Considering the state of the rectum, the congestion of its vessels, and the thickening of its tissues, creating an obstacle to the passage of the fæces ; and further the inflammation which ordinarily accompanies these conditions, it must be admitted that such remedies can scarcely fail to aggravate the local mischief. It is regarded, and justly, that the bowels, as far as is possible, should be regularly moved ; but medicinal substances which irritate them, which force them to act in a way that rather increases than diminishes the tendency to constipation, are certainly not the means which should be employed. The end should be attained by milder measures to be either safe or advantageous. The first among these is the determined application of friction to the abdomen. It invariably leads to the desired result, if not immediately, in the course of a week or ten days, after which the motions are regular and natural in appearance. If an aperient should be required, independently of homœopathic agents, castor oil will be equal to the purpose in view.

How obstinate soever may be the constipation, whether in this or in any other disease, *friction so used always corrects it*. It has never failed in my practice, whatever might be the affection for which it was prescribed, and my experience of its efficiency rests on numerous cases which had little in common, except the irregular and torpid action of the bowels. Is it not, therefore, evident, that if a healthy, or a comparatively healthy condition of these organs be established by such means, an important step is gained towards the successful treatment of hæmorrhoids ? The correction of constipation necessarily implies an im-

provement in the functions of the abdominal viscera, and of the animal system at large.

There are other affections of the intestinal canal which occasionally fall under the notice of the medical practitioner, as a periodical discharge of blood from the bowels, sometimes pure, at other times mixed with a purulent-like matter, *altogether unconnected with piles*, and as far as investigation has enabled me to judge, with any disease of the rectum. There is no pain in the passing of the fæces, nor is there any irritation or uneasiness about the anus; nor is constipation a prominent symptom. The seat and nature of the malady are equally involved in doubt. In some cases the discharge of blood occurs every few days, but mostly at much longer intervals. The quantity discharged is variable. In general it is not great; nevertheless it weakens and depresses the animal system, and ultimately gives rise to extreme nervousness and irritability.

Cases of this kind, though not of frequent occurrence, have come under my care and have yielded to the treatment employed. I will allude to two possessing more than common interest from the length of time that the disease had existed. One was the case of a married lady thirty years of age, and the mother of several children. She had suffered from the discharge of blood, once every two or three weeks, for six years. The constitution was naturally delicate. By means of *friction* to the abdomen, and various homœopathic remedies, the principal of which were *arsenicum*, *ipæcacuanha*, *phosphorus*, *china*, and *belladonna*, she was cured in four months; nor has she since had any return of the hæmorrhage. From my experience of the efficacy of friction, whenever the circulatory system is disordered, the symptoms observed being of a *passive*, and not of an *active* character, the cure of this case was, in my opinion, mainly to be ascribed to it.

The other case was that of a gentleman forty years of age, of good constitution, but enfeebled by over mental and bodily exertion, and anxiety connected with business. He came under my care four months ago. The hæmorrhage from the bowels occurred every ten or twelve days. The quantity discharged according to his statement was about an ounce: at times less than this. It was neither preceded nor followed by pain, fever, or any particular symptom, save a feeling of exhaustion or depression. The bowels were moderately regular. The disease from which he had suffered three years had gradually undermined his strength, and had compelled him to give up an active and profitable occupation. He had consulted several distinguished physicians, and different kinds of treatment had been employed but without any substantial relief.

It appeared to me, in taking into consideration all the circumstances of the case, that the disease had been induced by too close attention to business necessitating an undue expenditure of vital power. The effects would be nervous debility, and a disturbed state of the circulation giving rise, to a greater or less extent, to congestion of the abdominal viscera. The same treatment was enforced as in the previous case, and in two months the hæmorrhage had entirely ceased, and the patient expressed himself as greatly improved in health. He was, however, afterwards affected with distressing dizziness for several weeks, and when this was cured by the remedies prescribed, by difficulty of breathing,—symptoms from which he had not suffered previously. The occurrence of them did not at all surprise me; on the contrary, it was a result that might in some degree be calculated upon. The discharge of blood, from the length of time it had existed, had established certain vital relations to the animal system, and these, under the constitutional

circumstances created by it, had in consequence become a necessity. It was, therefore, reasonable to suppose, that on arresting suddenly the periodical hæmorrhage some other disease would manifest itself. This did not, however, lead me to regard it as a matter of importance, and from these considerations: there was not a *surplus* of blood in the body. It was simply disordered in its distribution and correspondingly deficient in vital properties. Hence in regulating the circulation it was scarcely to be expected that serious evils would arise. Had the constitution been plethoric,—possessed an excess of blood from gross and sensual habits,—it would have been imprudent to have stopped abruptly such discharge, without taking means to diminish the mass of blood in motion by appropriate medical treatment, and a modification of diet; or by forming an issue in some part of the body, which, as a centre of irritation, and a source of excretion, would have afforded protection against disease that might otherwise have been apprehended.

The gentleman whose case is here given is now in perfect health, and is engaged in active commercial pursuits. The dizziness, and the difficulty of breathing, yielded to homœopathic remedies and the continued application of friction.

The same kind of treatment will be found efficacious in *hæmatemesis* or vomiting of blood. When this occurs it is usually to be traced to disease of the liver, spleen or pancreas,—to the excessive congestion of one or more of these organs: and it is not unfrequently the consequence of an inordinate indulgence in stimulants, which is also occasionally the cause of the discharge of blood from the intestinal canal.

The liver, spleen or pancreas can scarcely be considered as alone suffering from congestion. It may be greater in

some of these than in others, but it must be more or less general. It cannot fail to implicate in various degrees different organs intimately associated in structure and function. The excessive congestion of the liver necessitating the discharge of blood, cannot possibly arise without the larger abdominal veins being in a similar or disordered condition; nor is it easy to conceive how this can exist without so disturbing the circulation in contiguous and closely connected viscera, as to produce in them a like morbid state.

It will, therefore, be evident to the enlightened practitioner, that to treat efficiently such cases the attention must not be fixed on the derangement of any single organ. This would be to take a narrow and incorrect view of the nature of the disease which exists; and were the treatment founded on such view, which indeed is often the case, though it might ultimately cure, this would nevertheless be tardy and unsatisfactory. The bleeding, blistering, purgatives, astringents, sedatives, and mercurials, which are usually employed, are clumsy, prejudicial, and unscientific remedies. The end which they are intended to effect may be accomplished by other means, such as those here laid down, which are at once safe, active and efficacious. The influence which they exercise makes no drain upon the animal system, lessens none of its vital resources; nor does it either directly or indirectly disturb the functions of any organ: it allows the body, by assisting nature kindly, to overcome the embarrassments which impede the freedom of its movements, and health, sounder than could possibly exist after any other mode of treatment, is the gratifying result.

I shall here close the consideration of friction in its direct application to the multiform disorders of the viscera. Sufficient has been stated of its physiological action, to enable others to apply it to diseases which have not been noticed or only incidentally touched upon. I shall endeavour to point

out its extraordinary value, as a remedial agent in other forms of disease very different from those which have hitherto engaged our attention, and the study of these will conclude the subject of friction.

§ 17. *The employment of Friction and other means in diseases of the Spinal column and Cord causing distortion or curvature, and in certain affections of the larger Joints.*

There are few affections that offer a larger field for physiological and pathological inquiries, or which on the whole are less understood, than those which it is proposed on this occasion to examine. The study and treatment of them have mostly been confined to a particular class of practitioners, who, from making them special objects of practice, have been regarded as alone qualified to take such cases in hand. If their fitness for the task is to be judged by their works, and the remedies they use, it will indeed assume very humble proportions. Some of them, though they have forced themselves into prominent notice, are as much machines as the machines they are in the habit of employing. They know little of the functions of the animal economy; nor do they seem to consider a knowledge of them as at all important or necessary to aid the curative process. Their mental vision is limited to the obvious defects of structure which fall under observation, and they attempt by rude and unscientific means to fashion these into a more graceful form. In dealing with nature, from ignorance of the laws which govern vital action, they often create or aggravate disease, and render a deformity permanent which judiciously treated would have left no traces of its existence.

These remarks are not hazarded without reflection, nor without just grounds. An authority, who from his attain-

ments possesses no mean weight, expresses himself in terms equally strong on this class of practitioners. "The treatment of spinal curvature," he says, "as promulgated to the public in recent times, would, in the hands of Molière, furnish a most bitter satire on medical practice:—so many writers, and so much said, and yet so little information furnished,—each successive author deprecating the means advised by his predecessors, and yet adding nothing to what was already known,—every new spine-doctor having his own apparatus, instrument, or couch to recommend and to sell, either or both being said to be capable of curing cases which were heretofore incurable,—the parading of casts of deformed trunks, rendered as symmetrical as the statues of antiquity by the newly discovered or peculiar method of treatment,—the promulgation of opinions *opposed to anatomical and physical truths to subserve delusion.*"*

The spinal affections on which it is my intention to make a few practical observations, will be considered under two separate heads: their occurrence in early childhood as a consequence of acute diseases, as measles, scarlatina, typhus and typhoid fevers, or of any disorder that interrupts for a time the natural exercise of the body; and the appearance of these affections at a later period of life without being preceded by any distinct disease.

The constitutional conditions of infancy and childhood have been fully discussed in a previous part of this work, and the way in which important organs act and re-act upon each other were explained at length. The views which were developed bear intimately on the present inquiry. They are, in fact, necessary to a thorough understanding of the subject. Had they been clearly apprehended by others who have treated of spinal diseases much more rational principles of practice would have been adopted.

* Dr COPLAND, *opus cit.*, vol. iv., p. 859.

When the child has suffered severely from the fevers alluded to, and often greatly debilitated by the active means employed, every organ of the animal system is in a weak and exhausted state. The abdominal viscera are generally the most affected. They are always the seat of congestion. This is an inevitable result of the disordered distribution of the blood and its deteriorated properties, which are pathognomonic of these diseases; and conjoined with the nervous depression succeeding the initial temporary excitement, are the main features which enter into the description of them. Independently of such derangement of the vital powers, there is another important object to consider the nature and influence of which have been overlooked by writers, as a principal source of morbid changes in the functions and structure of the nervous centres; viz., *the inactivity or comparative rest of the abdominal viscera in severe attacks of fever*, or fever tedious and yielding unsatisfactorily to treatment.

Action and re-action is the great law pervading the animal and vegetable creation. The cessation of motion is death; and every degree below what is natural, both in the animal and plant, is disease. All the parts of every living organic body are intimately bound together: they reciprocally impart and receive life.

The more noble or important the organs, and the more obvious is their dependence on other organs equally noble or important. We observe this in respect of the abdominal viscera. For the ability to perform their various functions they are indebted to the great nervous centres,—the *medulla oblongata* and *spinal cord*. The nervous energy drawn from these is the principle which excites and maintains them in constant action. The well-being of the nervous centres themselves *depends not less on the vigorous activity of these viscera*. Every change in the latter,

whether of excitement or depression, *necessitates a corresponding change in the former*. Hence when the viscera are inactive from the presence of disease, there being no desire for food, nor the power to digest it were it taken, the spinal cord is likewise *inactive*, and is often not less the seat of disease than the viscera themselves. The circulation in it is languid; its tissue becomes congested, as is seen in the enlarged and distended veins of its investing membranes. The blood is no longer in lively motion, but in many of its vessels is at rest.

From this pathological condition other consequences follow elucidating further the practical value of this inquiry. The inactivity of the spinal cord occurring under these circumstances necessarily leads to its impoverishment, to a diminution of its vitality, inducing a modification of its tissue which is designated *ramollissement* or softening. Every approximation to this state renders it less capable of furnishing the nervous fluid to the internal and external structures of the body; and this is one of the principal causes of the weakness and general disturbance of the functions of life. Whether the organs be those of secretion or of muscular motion they are equally incapacitated for the correct performance of their office.

The distortion of the spine does not take place to any great extent whilst the child is confined to bed, but when it is recovering from the febrile attack and is beginning to exercise its limbs. In the course of a few days, or a longer period, it is observed, that so far from progressing towards convalescence, becoming stronger and more equal to exertion, the child is, in fact, weaker, and at length ceases to walk or walks with difficulty. If the practitioner is not in attendance he is again consulted, and regarding the case as one of debility, prescribes tonics and other things of the same class in the hope of strengthening

the body. The object he has in view is just, but the means which he employs are often inefficient; and if they do not altogether fail they are tedious in effecting a cure, and occasionally are only partially successful. It is at this time, but in general only when the constitution is naturally weak or of a scrofulous tendency, that on examining the spine this is observed to be distorted, ordinarily presenting a lateral curvature of the cervical, dorsal, or dorso-lumbar vertebræ; or the disease may in various degrees involve the whole; and if not actively and judiciously treated the distortion becomes more marked, and should the child survive a permanent deformity remains.

As a rule, such cases are not difficult to cure, but to accomplish this, promptly and successfully, the measures enforced must invigorate the entire of the powers of life. No internal remedies will alone effect the object; nor will the application of any instruments, whether used to support the spine or to adjust the distorted vertebræ. Mechanical appliances are generally, and always in the early stage of spinal affections, unphilosophical in their aim and mischievous in their effects. They weaken the muscles by preventing their free, easy, or natural play; and they waste time which might be much more profitably expended in the employment of other means.

The curvature of the spinal column, whether lateral or otherwise, independently of the circumstances pointed out in respect of the condition of the cord itself, is chiefly attributable to the weak and irregular action of the muscles which support and give motion to this column; *the super-incumbent weight of the head and chest* becoming subsequently the principal cause of the aggravation of the disease. The spine is unequal to the pressure from above downwards from the feeble and attenuated muscles which operate upon it; and hence it gives way, and where the

vertebræ are the least capable of bearing the weight. According to some writers the curvature is due to disease of these bones ; others ascribe it to that of the ligaments, and it has been imagined to be occasioned by that of the muscles. There is no disease exclusively in any of these structures. The supposition is in my opinion absurd. None of them are in a healthy state, nor is there a sound fibre in the body. The disease is general,—it is that of the whole animal system, the parts most implicated being the great nervous centres, and they are among the first involved in the train of morbid action : and it is the continuance of their disordered functions that is mainly instrumental in keeping up and augmenting the evils which exist.

On the views which are here laid down there are three objects which present themselves to the mind, as those which should engage the attention of the practitioner in his efforts to correct spinal curvature. The *first*, is so to act on the spinal cord as to rouse it to greater activity, and to impart to it a healthier and more vigorous vital action. The *second*, is to excite and strengthen the muscles concerned in the support and movements of the spine, so that they may be enabled to bear the superincumbent pressure ; and the *third*, is so to influence the abdominal and thoracic viscera as to improve the appetite and the powers of digestion and respiration, the result of which will be the production of blood possessing higher vital qualities and characterised by a more equable distribution. The three objects are directed to the attainment of two physiological effects : *a healthier state of the nervous system, and of the properties and circulation of the blood.*

Before detailing the means which should be used, and the rules which should be observed in the treatment of cases of this description, I shall give the particulars of one which

came under my care about a year ago : such cases successfully treated being of very rare occurrence.

A child, four years of age, not of a robust, but of an average constitution, the son of a friend of mine residing in the country, had been seriously ill of typhoid or continued fever for six weeks. He had been treated allopathically, but had recovered very slowly from the febrile attack. When he had reached an early stage of convalescence the practitioner deemed further medical treatment unnecessary, believing that time, nourishing food, and pure air would complete the cure. These anticipations, however, were not realized. The progress was so slow that it was scarcely perceptible. The child was greatly emaciated and extremely weak ; and though able to walk it was feebly and with difficulty. It soon ceased to be equal to this exertion, and being unable to stand it was either confined to the couch or carried in the arms. The parents soon afterwards discovered that the spine was distorted in an extraordinary degree.

From the distressing nature of the case I was requested to see the child, and I candidly state, that though I have seen much of disease and of its effects in children, no case of the kind ever came under my observation displaying anything like the same amount of spinal distortion and general disease. The body was in the last stage of emaciation. The spinal column had a very singular appearance. The cervical vertebræ were curved towards the left side, the dorsal towards the right, and were so convexed as to assume the form of an arch ; and some of them had so far departed from a straight line as to be at right angles with those immediately above and below them. The head and shoulders seemed half lost in the deformed trunk. The lungs were very extensively disordered as would naturally be expected from this state of things. They were the occasion of my greatest anxiety. There was an exceedingly trouble-

some cough ; the breathing was short, wheezing or rattling, and the expectoration was copious, but the child not having the power, or not knowing how to get rid of it swallowed it, which caused frequent sickness and vomiting. The abdomen was large and tympanitic, and was not only painful on pressure, but was the seat of almost constant pain, and this in fact was one of the most distressing symptoms present. The restlessness, peevishness, and irritability, and the constant desire for something or change of position, rendered the nursing of the little patient a matter of no slight labour, and admirably indeed it was performed. Without the watchfulness and assiduity of the parents,—a devotion to the performance of a duty never surpassed,—medical treatment would have been of no avail.

The friends who saw the child looked upon the case as perfectly hopeless. My own anticipations of a favourable result were certainly not high, nor very encouraging; nevertheless having witnessed remarkable effects from what appeared to me the employment of sound practical measures, I undertook the case with a determination to see what art, science, and nature were capable of accomplishing.

There is occasionally in medical practice a species of *forlorn-hope*, and from particular circumstances fraught with no common interest, that is not without its use when it rouses, sharpens, and concentrates the mental faculties to a given point,—a case of extreme difficulty. The mind sees much farther and with greater clearness when it fixes its attention undividedly on one object. This, whatever be its nature, if studied, opens out abundant matter for thought and speculation.

In a previous page I have mentioned the considerations that should direct and regulate the treatment of spinal affections, and which were faithfully carried out in the case that is here brought under notice. The lungs, as already

stated, were a source of anxiety, and the treatment was modified accordingly: it did not, however, interfere with the employment of other means than medicinal substances. The homœopathic remedies which were used during the course of the disease, were *aconite*, *phosphorus*, *ipêcacu-anha*, *arsenicum*, and *calcareæ*.

Friction with olive oil was steadily employed morning and night, and sometimes during the day, to the spine, the whole of the back, and the abdomen. Several folds of linen immersed in hot water and wrung out were applied to the latter covered with oiled silk. The father of the child, a person of considerable intelligence, was made thoroughly to understand the aim and influence of the treatment, and the physiological effects it was calculated to produce. The confidence which this knowledge inspired secured the vigorous application of the means.

A minute detail of the progress of the case is not necessary. In little more than ten days there was an obvious improvement in some of the symptoms. The cough was slightly relieved, the respiration was less wheezing, and the expression of the countenance was a shade better, and the child was somewhat less fretful. At the expiration of a month there was a marked general improvement. The cough was no longer a prominent or distressing symptom, the trunk of the body was much more erect, more liberal and substantial nourishment was able to be taken, the bowels were moderately regular, fortunately rather inclined to constipation, and it was evident that the child had gained flesh. It was yet quite incapable of making any attempt to walk.

From this time every week showed manifest progress. At the end of two months the child, with assistance, could walk a little, but acting on my advice it was not allowed. The case requiring no further medical aid beyond what

could be given without personal attendance, I retired, impressing upon the father the importance of persevering in the friction for months to come, and of confining the child to simple articles of diet: and in particular not to permit it to walk until it could do this with moderate ease. These directions were carefully followed, and the ultimate result was—*the perfect health of the child, and the perfect straightness of the spinal column.**

When men write about matters to which they have given little thought, and certainly do not understand, they fall into grave errors. The following observations from a writer of eminence and weight in his day are a striking illustration of this: "Though the facts discoverable by examination of the skeleton of a person who has had distortion of the spine, are sufficient to prove that such means as friction, *cannot restore the distorted spine to its natural condition*, still we ought not to despise these processes."†

The case which has been given, and faithfully described, exposes the utter fallacy of such opinions. It may indeed be fearlessly asserted, that no other means than friction could have produced the same extraordinary structural and functional changes of the human frame. Let me ask what other means would the intelligent physician suggest as adequate to meet the urgent necessities which existed? Would any class of internal remedies have so influenced the animal

* This deeply interesting case, before it was sent to the press, was read to the father of the child, Mr William Furness, Whirlow Hall, Dore, Derbyshire, and I have his authority for stating that the description of it is *under* and not over the truth. The case, in every respect, was so remarkable, that I feel obliged for being permitted to use his name; otherwise, some persons might possibly have called in question the perfect accuracy of the facts stated.

† *The Nature and Treatment of the Distortions of the Spine, &c.* By JOHN SHAW, Surgeon and Lecturer on Anatomy. P. 152.

system as to re-establish its health, with the further advantage of a straightened spine? No one will claim for them such marvellous virtues. Nor would any of the absurd mechanical contrivances of the charlatan have given to the spinal column its natural and graceful form, and to the body the endowments of a sound constitution.

The foregoing case suggests remarks on the treatment and management of affections of this kind. As already observed, the object which has to be kept in view in the application of remedies, is to re-establish the normal functions of the spinal cord, to strengthen the muscles of the back, and to invigorate the digestive organs.

The spinal cord, physiologically speaking, is as directly acted upon by the hand in friction, as the cutaneous surface itself. There is unquestionably an *influence*,—call it nervous, electric, or by any other name,—which passes from the hand in this operation to the organic tissues superficially as well as deeply seated. It is through the agency of this mysterious and active power, that additional energy or life is imparted to structures subjected to this process, whether they be nervous, muscular, or of any other description; though in strict philosophical language, this power, apart from the *physical* effects of the hand, by which is to be understood its pressure, and the structural and functional changes to which this gives rise, *can act only on nervous matter* existing in different forms and conditions throughout the animal system.

It is practically of little consequence, whether the opinion expressed concerning one of the two modes in which friction operates be accepted or not; the fact remains—the marvellous and unquestionable power which it exercises on organs not at all affected by the direct *pressure* of the hand. This opinion, however, rests on experiments which have been repeatedly made by myself. The *influence* here

spoken of will, in the course of a few seconds, accelerate the movements of the heart by twenty pulsations, though the *hand*, through which it is conveyed, be at the distance of a foot from the person acted upon, and who, at the same time, is unconscious of external objects.

The muscles of the back are greatly attenuated and weakened by severe and long sickness, and in the child far more readily, and to a greater degree, than in the adult. Friction stimulates the circulation throughout the cutaneous and muscular tissues, brings to these an increased quantity of blood, sets up in them healthier and more extensive vital processes, the consequence of which is the growth or development of the muscles. They may be made to grow as much from friction as by any species of bodily exercise. There is nothing peculiar about the latter in its influence on any single muscle, or associated class of muscles, that does not, in general terms, *equally characterise friction*. Hence, in spinal diseases, the immense importance of this remedy, when the muscles, which support and give motion to the spinal column, can no longer efficiently perform these offices. It supplies the absence of other exercise on which their sound condition depends. The child confined to the couch or the arms, and, therefore, withdrawn from the ordinary influences of health, may nevertheless, when suffering from these affections, have means applied which are thoroughly corrective of the serious vital disturbances existing.

It was stated that the child was not allowed to walk until it could do this with comparative ease. To have permitted it would have retarded the cure, and certainly would have rendered this less complete. Undue pressure would have been thrown upon the spine before it was able to bear it; and consequently would have tended to counteract the good effects that judicious treatment was producing. There needs to be

no hurry or anxiety about the child walking if its nervous and muscular systems are being gradually strengthened. *It will find its legs* and use them when the use of them is easy and pleasurable ; and before it is rarely prudent to exercise them except in an extremely limited degree.

The diet, it was stated, was to be simple, as milk and puddings in their various forms and combinations. Practitioners, as well as parents, frequently err on this subject. They are apt to indulge the child with animal food though strictly confined to the house, regarding it as necessary to strengthen the body. The doctrine and practice have little to recommend them. Such food frequently does harm. It keeps up fever from the irritation it creates, and, so far from invigorating the animal system, is often the occasion of its continued weakness or slow restoration to health. It is soon enough to take animal food when the child has the advantage of fresh air and of out-door exercise.

It is amusing, but at the same time lamentable, to observe how circumscribed and erroneous were the notions of some of the best informed writers on spinal diseases, with respect to the action and influence of friction as a remedial agent. A writer, and one who possessed considerable scientific attainments, remarks: "Friction or rubbing, may be considered as operating immediately on the surface; and unless done with *considerable force*, it produces only a change in the circulation of the skin, which, however, is of great use in many diseases that are dependent on weakness or torpidity of *the system of the part*."*

Considerable force so far from being essential could not be borne by the child; nor indeed would it be wise to attempt it. It would do mischief instead of good. The

* SHAW, *opus cit.*, p. 152.

friction can scarcely be too light to act genially and beneficially. The writer supposes it to act only on the tissues superficially seated, when in fact it affects little less those that are deeply situated. Such narrow and incorrect views, which may be said to be universally entertained, will be admitted to furnish a sufficient apology for the physiological researches entered into concerning the nature and influence of friction.

There are disorders of the spine, and of the animal system, occurring at the time of teething, when the last teeth are cut with difficulty, to which it is pertinent to allude on this occasion. The pain, and general disturbance of the functions of life, to which this natural process gives rise, frequently prevent children from walking till late, or if they have learned to walk, to use a common expression, *they are taken off their legs*: they walk feebly and indifferently, and if this continues for any length of time the child usually becomes *in-kneed*, and the lower extremities are otherwise distorted. The deformity, unless proper treatment be employed, remains, in some form, a permanent defect.

Cases of this kind often give parents considerable anxiety, and various means are resorted to to strengthen the body, but seldom such as are calculated to effect readily the object in view.

From the appearance and examination of the child it is evident that the animal system generally is disordered, and that the weakness which has been induced, is chiefly to be ascribed to the disturbance of the digestive organs, either lessening the appetite for food, or not allowing that which is taken to yield the nourishment which is required. The ingesta are imperfectly elaborated, and in consequence the blood does not possess the normal constituents of health, nor is it vigorously circulated throughout the body. The face is almost invariably pale, and the flesh soft or flabby,

the alvine evacuations are irregular, frequently prone to be loose and otherwise more or less unnatural.

In the minor degrees of constitutional derangement, simply diminishing the ability of the child to walk, the only means necessary to correct this is friction applied to the spine and the whole of the back, morning and night, in the way which has previously been explained, and should be persevered in as long as weakness exists, or until the child is able to walk strongly and with ease.

This external remedy will mostly in a month, sometimes in less time, effect the desired bodily improvement. From my observation of its efficacy it is unfailing, and will not disappoint expectation if used with the assiduity and determination essential to success. If the abdomen is somewhat large or prominent, friction applied to it will greatly facilitate the cure. It is only occasionally that any other kind of treatment is required. Nature, if she get the assistance here indicated, will speedily right herself.

In the more aggravated forms of the affections here considered, the means to be employed must be proportionately more various and energetic, and be longer continued. When the child is thoroughly out of health, not able to walk, or walks with difficulty, has become thin, and the flesh is loose and soft, the limbs attenuated and shapeless, the abdomen tumid or enlarged, and the digestive organs greatly disordered; and in addition to these symptoms the child is fretful and irritable, there is urgent necessity for active, but from its mode of operation, mild treatment. If this be neglected, or that which is pursued be injudicious, the body gradually becomes weaker, further disease manifests itself, and death at length puts an end to the struggle.

No particular name can be given to the malady of which the child dies that accurately describes its nature. This may be stated to be an affection of the brain, lungs, or

alimentary canal, the prominent symptoms at the last being referable to one or more of these organs. The disease, however, which brings about a fatal issue, *is that of the whole animal system*—the deteriorated properties of the blood and its irregular distribution, conjoined with and originating in nervous debility and depression,—conditions which it is in the power of sound and enlightened medical treatment to correct, if enforced before extensive structural changes take place.

Cases presenting the symptoms here sketched are far from unfrequent; and if the temperament be scrofulous, during the course of disease,—*the constitutional disturbance*,—some of the larger joints become affected, as the knee, the elbow, or the hip, or deep-seated abscesses form. The treatment which was laid down and strictly followed in the remarkable case which has been related, should be rigidly carried out in the early stages of the constitutional derangement, which, to the practised eye, foreshadow the serious consequences that otherwise will probably succeed.

In early life there is an immense amount of disease that can be prevented, or cured, if we only employ means that are based on just and comprehensive physiological and pathological principles, principles which teach us to seize the great causes of disease,—the disturbance of the nervous and circulatory systems,—and at the same time instruct us in the mode of so influencing these, that what is abnormal, readily passes into that which is natural and health is the result.

The next subject connected with this inquiry, and scarcely of less practical importance than that which has occupied our attention, is the occurrence of spinal curvature in youth, ordinarily between ten and sixteen years of age. It is more common in the female than male sex, from the

greater delicacy of constitution, the less active muscular exercises indulged in, and other causes, which, at the period alluded to, alone affect the female system.

The appearance of spinal distortion at this time of life, from the frequency of its occurrence, has particularly arrested the attention of the profession, and numerous treatises have been written for the purpose of elucidating its nature, and laying down what the authors thought to be sound and judicious principles of treatment. Nevertheless no two of them have scarcely anything in common on either point. To the charlatan the disease has furnished a rich harvest. He has found in the public willing ears and a large amount of faith. He has been looked upon as alone qualified to take in hand such cases, as if there was something so peculiar about them, that others, far his superiors in anatomical and physiological knowledge, could not possibly understand them. He certainly gives evidence that he does not, or his methods of cure would be more rational than those he advocates.

Lateral spinal curvature is that which is usually observed. As the term implies it is a curve to one side. The causes, which give rise to it are treated of as various, but leaving out of consideration disease of the ligaments and vertebræ, which is very rare, they may, however, be brought under two heads: *constitutional weakness*, and *habits which exercise one side of the body more than the other*, producing irregular action of the muscles which support and move the spinal column.

It is often after illness which has debilitated the animal system, followed by the rapid growth of the body, that this kind of distortion occurs. The spine being unequal to bear the weight of the head and chest, the lumbar vertebræ yield to the pressure from above, downwards, and bulge out usually to the *left* side, which distortion, in an early stage, is

seldom detected. It necessitates, however, a further structural change. The effort to restore the balance, which maintains the erect position, forces out to the *right* side the dorsal vertebræ, and according to the curve produced is the obvious deformity which presents itself to the eye. When at all marked in degree, the right side of the chest is larger than the left, the right shoulder is further removed from the spine; the right breast of the female is more developed than the left, and the neck on the same side appears thickened, as if affected with disease, and occasionally this has been imagined to be the case, the spinal curvature being overlooked, or the influence it exerts in producing this result not being fully understood.

It is asserted by Mr Coulson, an authority not safe on slender grounds to question, that in lateral distortion of the spine, the curvature *begins* in the dorsal, and not lumbar vertebræ. He is in the main correct when the deformity is attributable to habit, which gives an undue preponderance to the action of the muscles of the right side of the body; but not in my opinion when *it arises from decided constitutional weakness*. According to Mr Mayo, a gentleman of high scientific attainments, and an honour to the profession, the two curvatures are not successive, but necessarily *simultaneous*. In arguing that they are successive, the period may be, and undoubtedly is, short, which separates the manifestation of the two curvatures, as either necessitates the other. If, however, we consider that the spinal column has to bear a weight,—that of the head and chest,—and that the weight will be the greatest on the *lower* portion of it, is it not reasonable to conclude, *cæteris paribus*, that here will be the initial curvature?

Differences of opinion on a matter of this kind does not, however, at all affect the practical treatment of the disease, which is the important subject to discuss.

In cases of lateral curvature, or whatever be the character of the distortion, the question forces itself upon the mind, what is the co-existing state of the animal system,—the general and local morbid conditions which have to be taken into account,—in laying down and enforcing the application of remedial measures? The constitution is delicate,—the functions of life are feebly carried on, as is evident from the appearance of the patient, the pallid expression of the countenance, the languid movements, the dislike to exertion, and the slight development of the muscular system. The circulation is feeble and as a consequence of deficient nervous power. In directing attention to the spine we observe its distortion, the undue prominence of the muscles on one side of the chest, and the necessarily irregular action induced in the whole of the muscles concerned in the support and movements of the spinal column,—an action which goes on aggravating the evil, giving greater energy of function to the muscles of one side of the trunk at the expense of those of the other.

Such is a brief, but accurate description of the leading features characterising spinal curvature. Are we to endeavour to correct this by tonics and substantial nourishing food? Will either make the spine straight? They may strengthen the body, though they only occasionally do this under the circumstances which exist. Or shall we study to accomplish the object by mechanical contrivances, some of which propose to give support to the head and trunk, thereby to relieve the pressure upon the spine; or to force the distorted vertebræ into the desired form? Such instruments are, with very few exceptions, absurd in conception and injurious in their influence. They impede and variously interfere with the action of the muscles involved in, and forming an important part of, the spinal affection. Muscles, like every organ of the body, can be strengthened

only by use, and the treatment to be salutary in its effects, must excite, under certain conditions, the action of these muscles. They have to be invigorated, and to do this additional life-imparting currents must be conveyed to them, and maintained in lively movement. The task is not a difficult one.

Keeping in view the state of the animal system, and the nature of the local disease, one of the first considerations is, to strengthen the digestive organs, so that the food which is received may be converted into a stronger and a more highly vitalized stream of blood than that which exists. This may in large measure be accomplished by friction to the abdomen employed morning and night. The next step, though it should be enforced at the same time as the other, is friction to the spinal column and muscles of the back. The muscles which are to be principally acted upon, *are those of the weak or least developed side of the trunk.* It is in these that vital action has to be excited and greatly strengthened, and the means here indicated cannot possibly fail in producing these results. In proportion as we develop and strengthen these muscles, they acquire the power of counteracting the influence of those which have an undue or predominant action. To correct this is an important element in the process of cure.

As corroborative evidence of the necessity of rousing to vigorous action the muscles in question, it is clearly proved, that in consequence of the change they have undergone from their greatly lessened activity, the nerves which are distributed to them, are, in some cases, observed to be diminished to less than one half their natural size.* This fact in itself furnishes a powerful argument in favour of the treatment which is here insisted upon as an imperative necessity.

* SHAW, *opus cit.*, p. 68.

By no other means than friction can these nerves be directly and energetically acted upon, so as to induce in them those vital modifications which end in the re-establishment of their normal structural development.

The treatment which is recommended will not require a lengthened period to establish its advantages. A few weeks will be sufficient to display these. The friction should, however, be continued until the spinal distortion is entirely removed. It would, also, greatly aid the cure were the body to be dashed with cold water every morning and rubbed vigorously with a coarse towel; not at the commencement, but towards the termination, of the treatment, when the animal system possesses sufficient vital energy to give rise to the necessary re-action.

The diet of the patient should be simple, nutritious, but easy of digestion. The sleeping apartment should be well ventilated. The bed should be a hair mattress, or of a kind that affords equal support to the whole spinal column. The exercise which is taken should be gentle until the diseased muscles have acquired power to render this easy and pleasurable.

The patient should rest occasionally, during the day, in a perfectly horizontal position upon a moderately *hard* couch, or what is preferable, on an inclined plane of the same nature. This gives great relief to the spine and its associated muscles, which, at this time, are incapable of much bodily exertion. It is also important to remark, that corsets or stays, under existing circumstances, are extremely objectionable. They not only impede the free action of the muscles of the trunk, which should be altogether unfettered in their movements; but by lessening these movements, they so affect the vital condition of the muscles as to lead to the *partial absorption of them*. They become attenuated and are proportionately weakened. When the body, inde-

pendently of the presence of spinal disease, is at the period of life here contemplated, assuming larger, nobler and more graceful forms, the freest action should be given to every part of it. Nature displays the vigorous endowments of health only when in the enjoyment of perfect freedom.*

In the foregoing remarks concerning spinal curvature, the frequently prevailing symptoms of the disease, in its somewhat aggravated form, have been discussed at sufficient length. The affection often occurs in a less marked degree, and not as a consequence of previous illness which has weakened the animal system, or from the rapid growth of the body, but chiefly from the sedentary pursuits of the individual, the close application to which is unaccompanied by any support to the back; and further necessitates the far greater use of the right than left side of the trunk, as is the case in many of the occupations of the female. The habit which is formed of using the right side in excess of the left tends to give greater muscular development to the former, and when there is any delicacy of constitution, or the absence of bodily exercise calculated to correct this preponderating influence, ultimately gives rise to spinal distortion. This, occurring under such circumstances, mostly begins in my opinion in the dorsal, and not lumbar vertebræ. It may nevertheless commence in the latter, and probably does when there is greater constitutional weakness, than is here regarded as present as a predisposing cause.

In what way the affection originates is a matter of no moment. The practical consideration is, how should it be treated. The habits of the individual should be consider-

* Professor MONRO, *Tertius*, when in the course of his lectures he came to treat of the structures of the thorax, always took care to inform his class, that his own daughters had never been allowed to wear stays, and they were remarkably fine specimens of their sex.

ably modified. The pursuits which have been instrumental in the production of the evil, should for the time being be laid aside, and muscular exercise, moderate in degree, and varied in character, should be enjoined. Occasional rest, during the day, on a hard couch, will be of use. The treatment in other respects should be the same as in cases of greater severity. The muscles of the left or weak side of the chest have to be strengthened and more fully developed, and as already observed, friction is alone equal to the accomplishment of these objects.

There are other distortions besides those which come under the designation of *lateral*, and when of this kind differ from the description given above. But if not primarily dependent on disease of the vertebræ or ligaments, which is very seldom the case, the distinctions are of no practical importance and require no particular notice. It must of course be understood that unless the spinal curvaturæ be of recent or somewhat recent origin, the means which are here laid down can be of little use. If the diseased structures have passed into a thoroughly *chronic* condition, have been long permanently fixed in their ill-adjusted state, neither friction nor any other external application will be able to exercise a corrective influence. Spinal affections, however, are always discovered, if not in the initial deviations of the spine from what is natural, in time to admit of efficient treatment; and if this be neglected it is the fault of parents, who err, not from ignorance of the existence of the mischief, but from indifference or some other cause.

Before concluding this inquiry, I shall make a few observations on the frequency of spinal affections as a consequence of other diseases, particularly of the abdominal viscera, of a chronic nature and of long continuance, in which it is impossible that the spine can be otherwise than disordered, not only functionally, but structurally. The spinal cord,

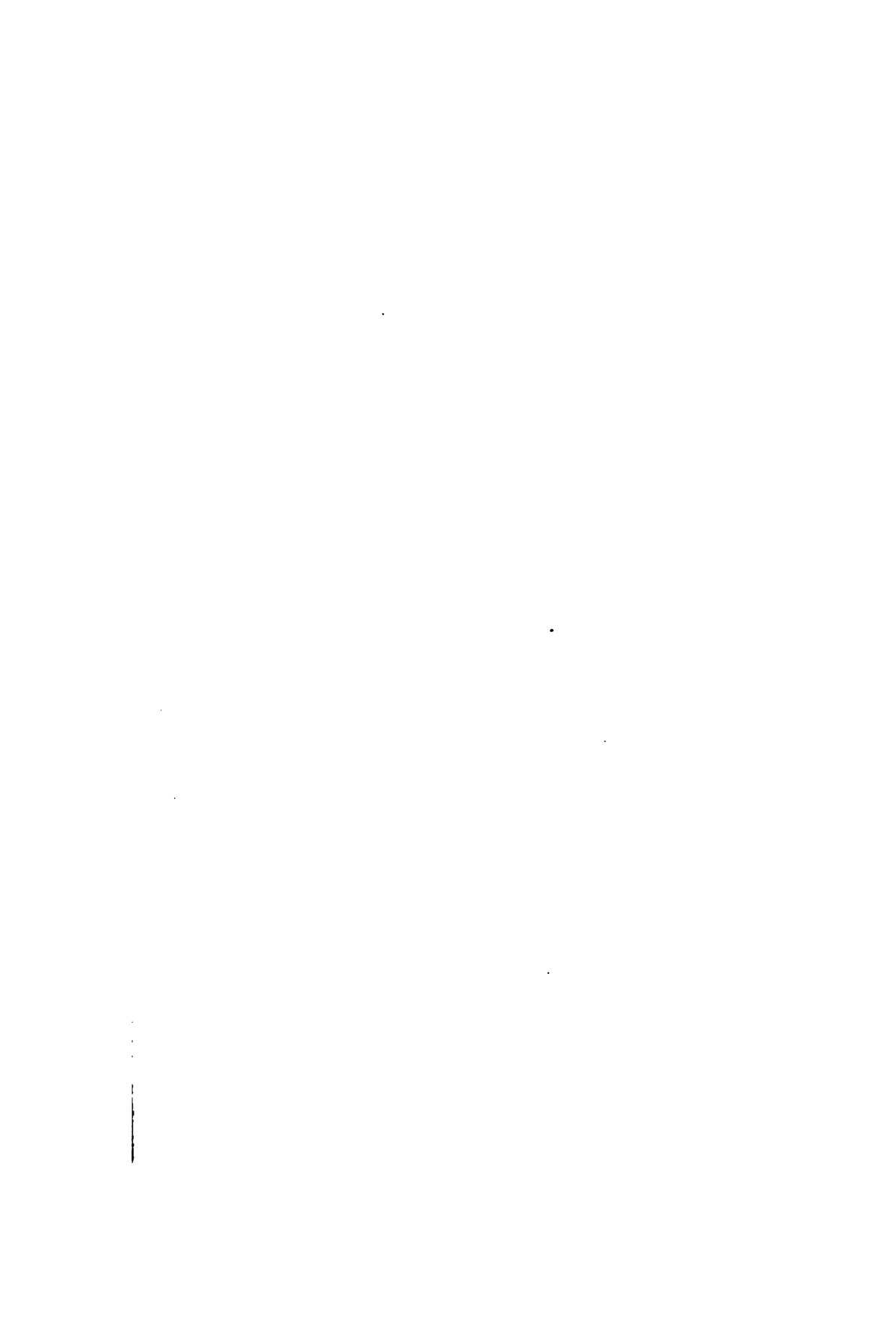
and these viscera, are too intimately connected in the performance of important vital actions, to allow the former to escape the disturbing influence of the latter. Hence it often happens in such cases, mostly admitting of no cure, that other advice is sought, and the practitioner who is called in, having no exact knowledge of the disease which has led to the complication,—the diversified structural changes which exist,—finds, on examining the spine, that it is tender, painful on pressure: he does not hesitate in the expression of his opinion. He imagines he has discovered the *real* and the *original* disease from which the patient has suffered and is suffering. He regrets that this has been overlooked by those previously in attendance, otherwise the case might have been readily cured. Had he, however, possessed larger and juster views of the mode in which one class of organs affects another, remotely situated, and exercising widely different functions, his conduct on such occasions would display greater intelligence and liberality.

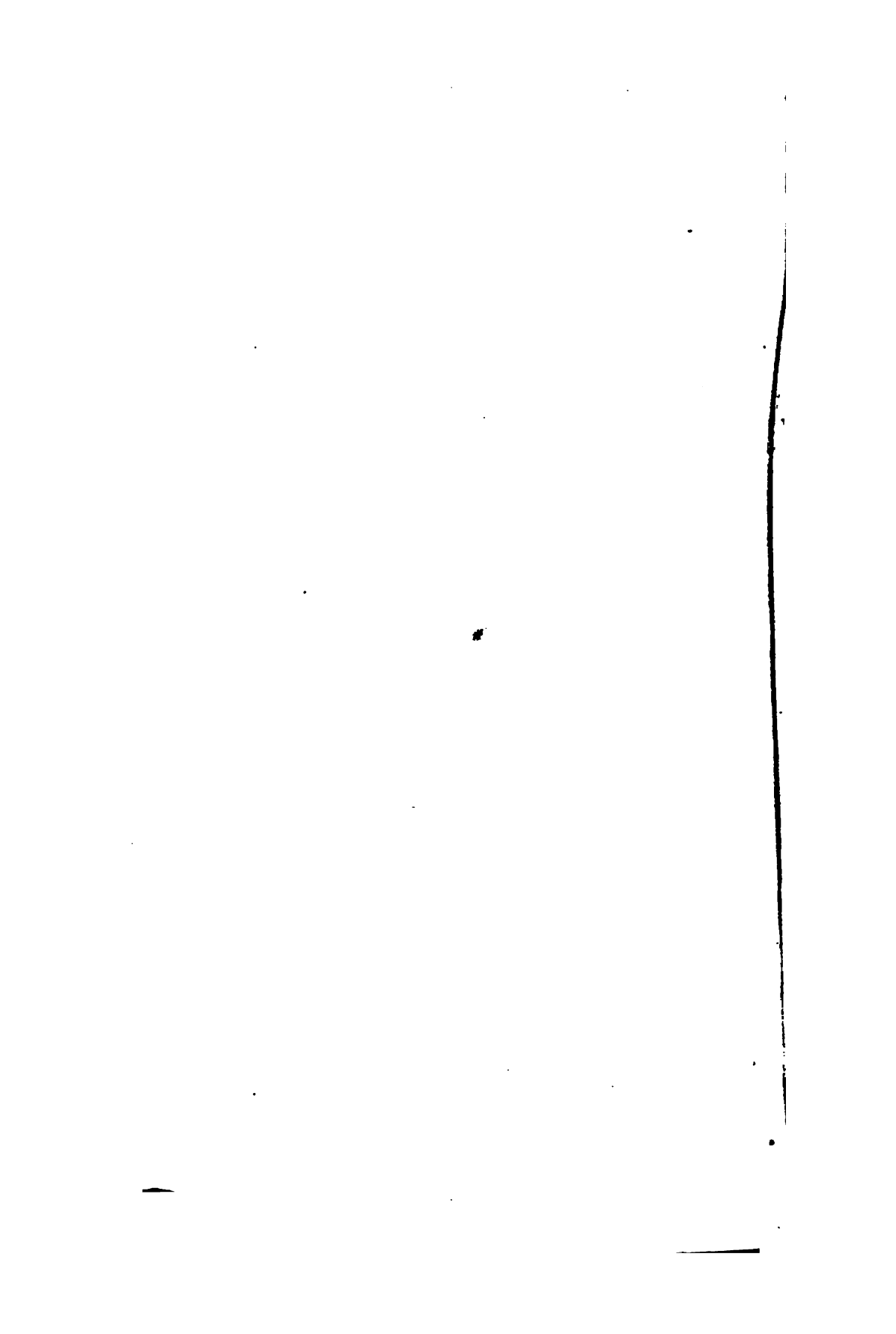
I have now brought to a close the physiological and pathological researches on which I entered. They have occupied much time, thought, and consideration. My anxiety has been to bring prominently before the non-professional mind, the chief or distinguishing features of many important diseases. My professional credit or reputation very largely rests on the views developed. They have not been immaturely brought forward. No plea is urged on their behalf on the want of opportunity to do justice to them. They have, however, their serious drawbacks: the principles of treatment which they recommend, as auxiliary to, or independent of, other remedial measures, *are too simple, too much within the power of every one to apply*. This is their great defect. It is a mistaken idea, if entertained, that mankind, in respect of medicine, is prone to be most enamoured of that which is intelligible, easy to understand

and use. Their faith and confidence is in the ratio of their ignorance of the means employed. As they know nothing of the origin, nature, and progress of disease, they conclude that the remedies necessary to cure it are matters entirely beyond their comprehension. It is useless to attempt to enlighten them on this subject; nevertheless I have studied to do so and from a feeling not unnatural in a writer. When he fails to interest the many he falls back upon the few and flatters himself with their approbation. If deprived of this,—and occasionally this is withheld,—still fruitful in resources which gratify his vanity,—he falls back upon himself and believes that he has not altogether laboured in vain. Time tests his work as it does everything else. That which is worthy to live will survive; that which has no such claim will perish. The author not indifferent about the fate of his work leaves it to the candid and liberal judgment of others. It was prompted by a desire to do good, and if it excite thought and inquiry on any of the important matters discussed, this will in some degree be accomplished.

ERRATUM.

Page 348, *for* § 17, *read* § 16.





1

2000-01-01

.

.

.

.

.

.

.

.

.

.

.

.

1

